



iPhone X Earpiece Speaker and Front Sensor Assembly Replacement

Remove/replace the earpiece speaker assembly in an iPhone X, including the flood illuminator, proximity sensor, ambient light sensor, and microphone.

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INTRODUCTION

Follow the steps in this guide to remove or transfer the earpiece speaker and front sensor assembly in your iPhone X. This assembly includes the earpiece speaker, 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 can restore Face ID function.



TOOLS:

- [P2 Pentalobe Screwdriver iPhone](#) (1)
- [iOpener](#) (1)
- [iFixit Opening Picks set of 6](#) (1)
- [Suction Handle](#) (1)
- [iSlack](#) (1)
- [Spudger](#) (1)
- [Tweezers](#) (1)
- [Tri-point Y000 Screwdriver Bit](#) (1)



PARTS:

- [iPhone X Earpiece Speaker and Sensor Assembly](#) (1)
- [iPhone X Earpiece Speaker](#) (1)

Step 1 — 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 6.9 mm-long pentalobe screws at the bottom edge of the iPhone.
- ✦ If the screws are stripped or damaged, [replace the screws](#).
- ⓘ 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.

Step 2 — Opening Procedure



- ① Heating the lower edge of the iPhone will help soften the adhesive securing the display, making it easier to open.
- Use a hairdryer or heat gun or [prepare an iOpener](#) and apply it to the lower edge of the iPhone for about a minute in order to soften up the adhesive underneath.

Step 3



- i** The next two steps demonstrate the iSlack, a handy tool that we recommend for anyone doing frequent repairs. **If you aren't using the iSlack, skip down two steps for an alternate method.**
- If the plastic depth gauge is attached at the center of the iSlack, remove it now—it's not needed for larger phones like the iPhone X.
 - Position the suction cups near the bottom edge of the iPhone—one on the front, and one on the back.
 - Press both suction cups firmly into place.
- i** If your display or back glass is badly cracked, [covering it with a layer of clear packing tape](#) may allow the suction cups to adhere. The iSlack also includes two pieces of tape for this purpose.

Step 4



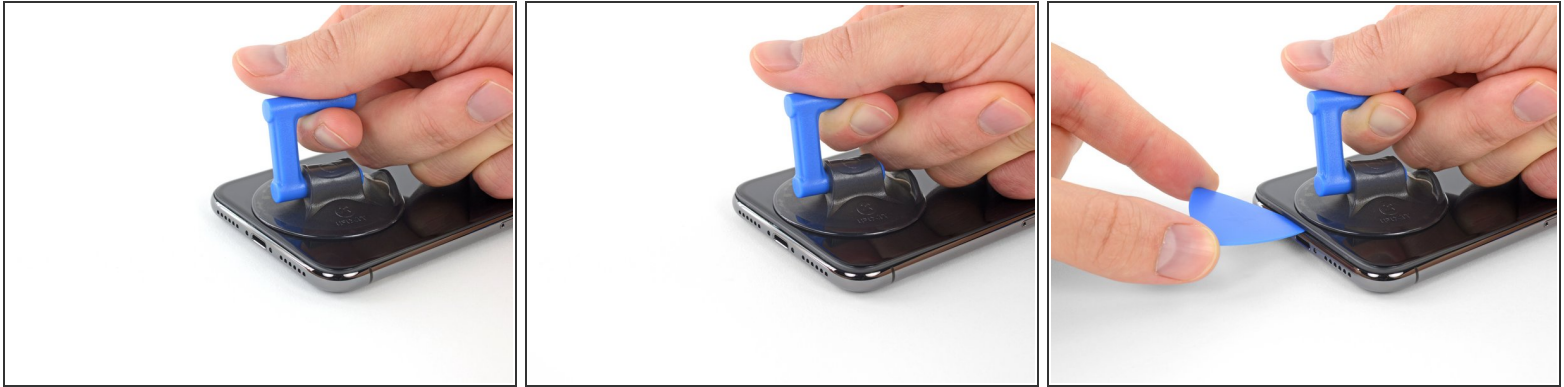
- Hold onto your iPhone securely and close the handle of the iSclack to slightly separate the screen from the rear case of the phone.
 - ⚠ Don't try to completely separate the screen; a small opening along the bottom edge is all you need.
- Insert an opening pick into the gap.
- **Skip the next two steps.**

Step 5



- If using a single suction handle, apply it to the bottom edge of the phone, while avoiding the curved portion of the glass.
- ⓘ 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 6



- Pull up on the suction cup with firm, constant pressure to create a slight gap between the front panel and rear case.
 - Insert an opening pick into the gap.
- i** The watertight adhesive holding the display 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 7



- Slide the opening pick around the lower left corner and up the left edge of the iPhone, slicing through the adhesive holding the display in place.
- ⚠** Don't insert the opening pick too far into the iPhone, or you may cause damage to internal components.

Step 8



- Re-insert your pick at the bottom edge of the iPhone, and slide it up the right side to continue separating the adhesive.

 Don't insert the pick very far, or you may damage the display cables along this side of the iPhone. Insert it only a few millimeters, or about the width of the display bezel.

Step 9



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

- Slide the opening pick around the top corner of the display, while gently pulling or wiggling the display **down** in the direction of the Lightning port.

 The clips will break if you use too much force. Work carefully and be patient.

 Again, don't insert the pick more than a few millimeters—about the width of the display bezel—or you may damage the front panel sensor array.

- Slide the pick to the opposite corner and cut any remaining adhesive securing the display.

Step 10



- Pull on the small nub on the suction cup to remove it from the front panel.
- If you used an iSlack and it's still affixed to the iPhone, remove it now.

Step 11



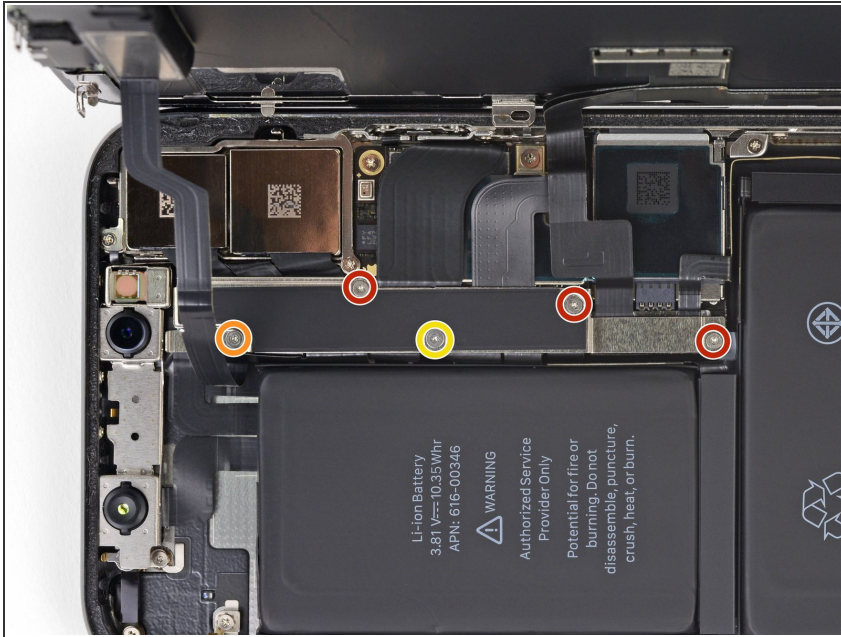
- Open the iPhone by swinging the display up from the left side, like the back cover of a book.

 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 12 — Display Assembly



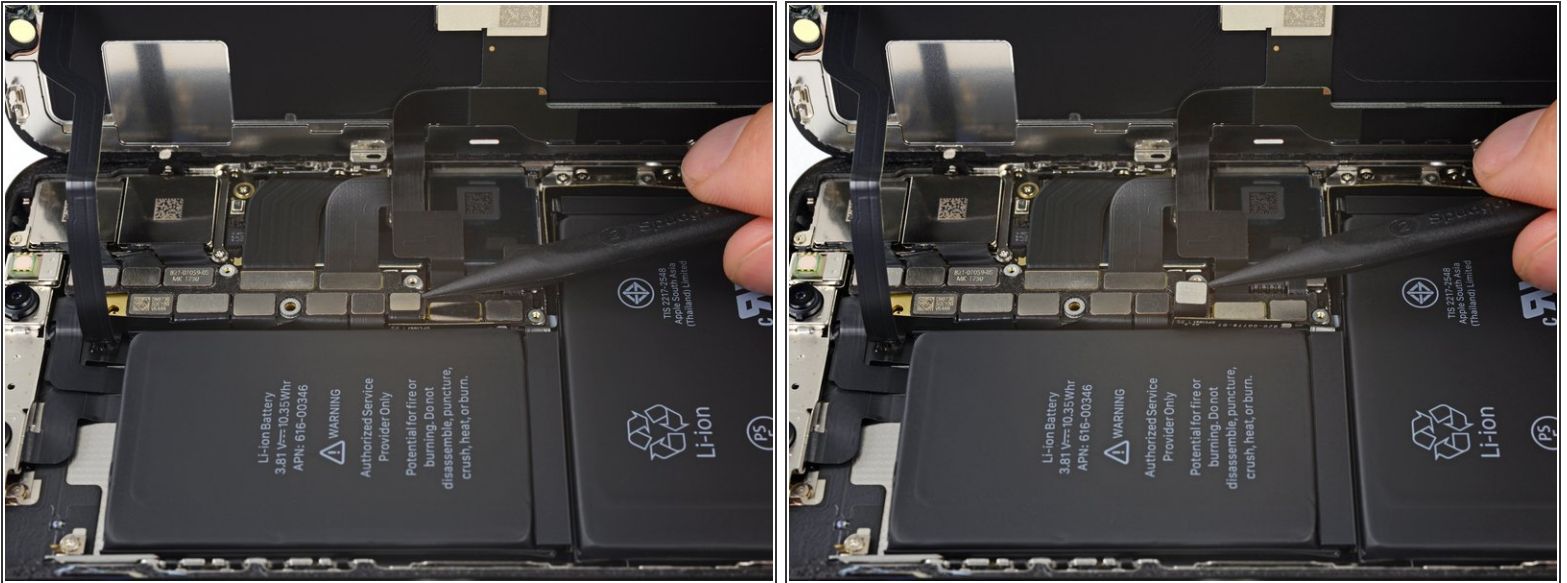
- Remove five Y000 screws securing the logic board connector bracket, of the following lengths:
 - Three 1.1 mm screws
 - One 3.1 mm screw
 - One 3.7 mm screw
- ⓘ Throughout this repair, [keep track of each screw](#) and make sure it goes back exactly where it came from to avoid damaging your iPhone.

Step 13



- Remove the bracket.
 - ⓘ The bracket may be lightly adhered in place. Lift gently but firmly to separate it.
- ✦ 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 14



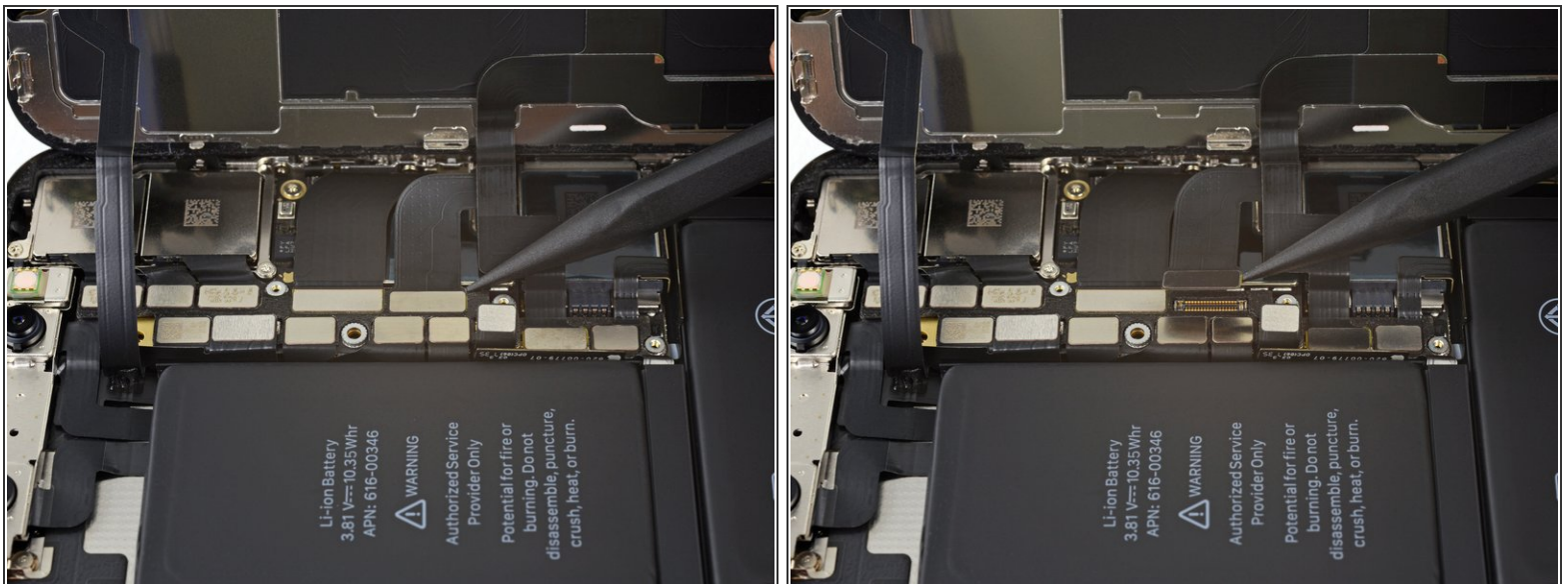
- Use the point of a spudger or a clean fingernail to pry the battery connector up from its socket on the logic board.
- ⓘ Try not to damage the black silicone seal surrounding this and other board connections. These seals provide extra protection against water and dust intrusion.
- Bend the connector 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 15



- Use the point of a spudger or a fingernail to disconnect the front panel sensor assembly connector.

Step 16



- Use the point of a spudger or a fingernail to disconnect the OLED panel cable connector.
- ☑ 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



- Use the point of a spudger to pry the digitizer cable connector up from its socket.
 - ✦ This connector's recessed location makes it tricky to reconnect. Take your time and align it carefully, then gently press it into place with your fingertip—first one side, then the other. You should feel it click into place.
 - ✦ If any part of your screen doesn't respond to touch after your repair, disconnect the battery and then re-seat this connector, making sure it clicks fully into place and that there's no dust or other obstruction in the socket.

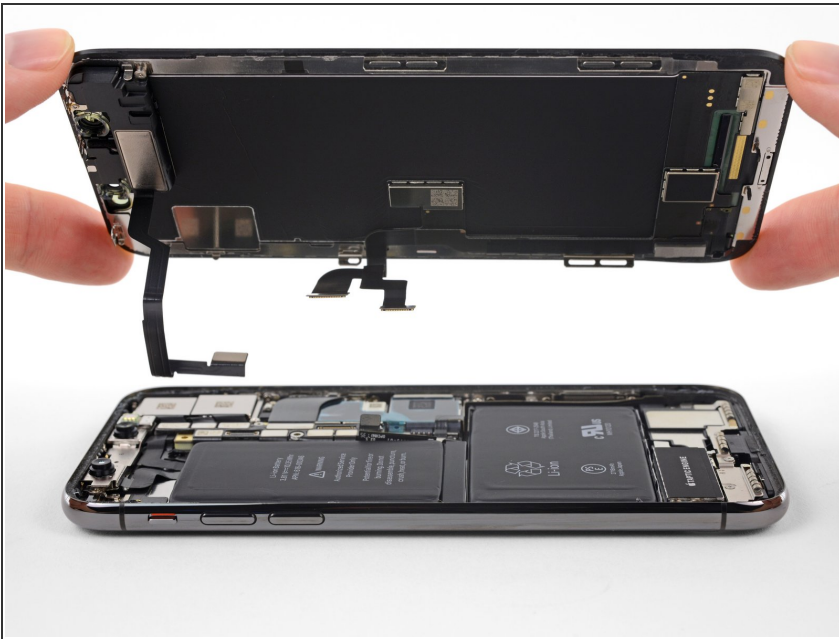
Step 18



 The front panel sensor assembly flex cable is lightly adhered in place.

- Carefully lift the cable until the adhesive separates.

Step 19



- Remove the display assembly.

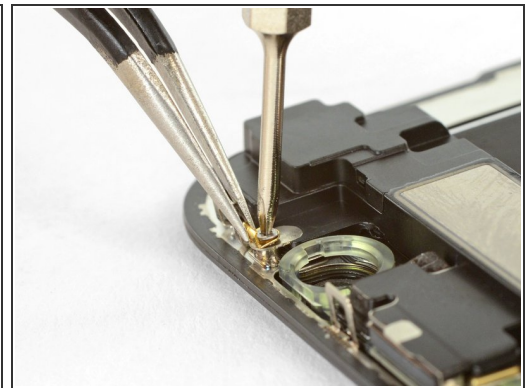
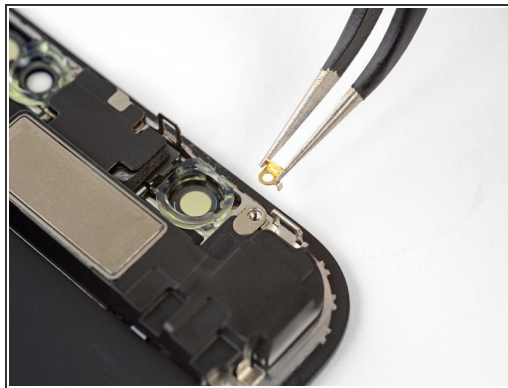
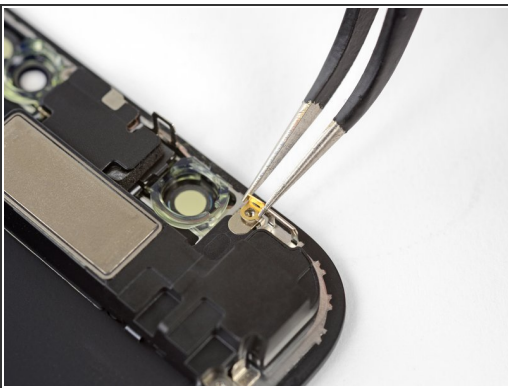
 During reassembly, pause here if you wish to [replace the waterproof adhesive around the edges of the display](#).

Step 20 — Earpiece Speaker and Front Sensor Assembly



- Remove the 1.2 mm Y000 screw on the back of the display assembly, near the infrared camera port.

Step 21



- Beneath the screw you just removed lies a small metal grounding clip. If it didn't already come out along with the screw, remove it now.
- ✦ During reassembly, orient the clip as shown. Hold the clip in position while you install and tighten the screw.

Step 22



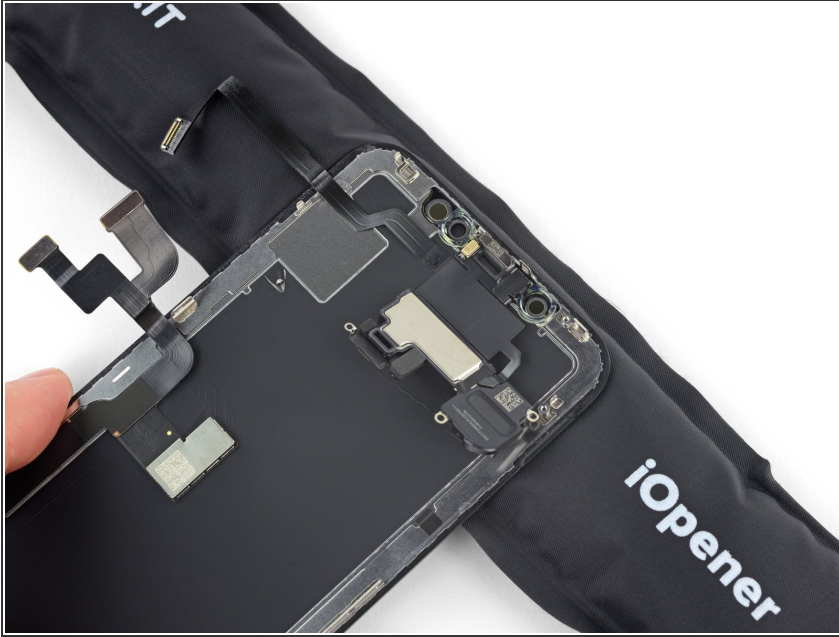
- Remove two more Y000 screws securing the speaker/sensor assembly:
 - One 1.6 mm screw
 - One 1.3 mm screw

Step 23



- ⓘ The earpiece speaker is lightly adhered in place.
- Using a spudger, gently pry under the top edge of the speaker assembly, and flip it over—down and away from the top edge of the display.
- ⚠ The speaker remains attached via a very thin flex cable. Be careful not to strain or damage the cable.

Step 24



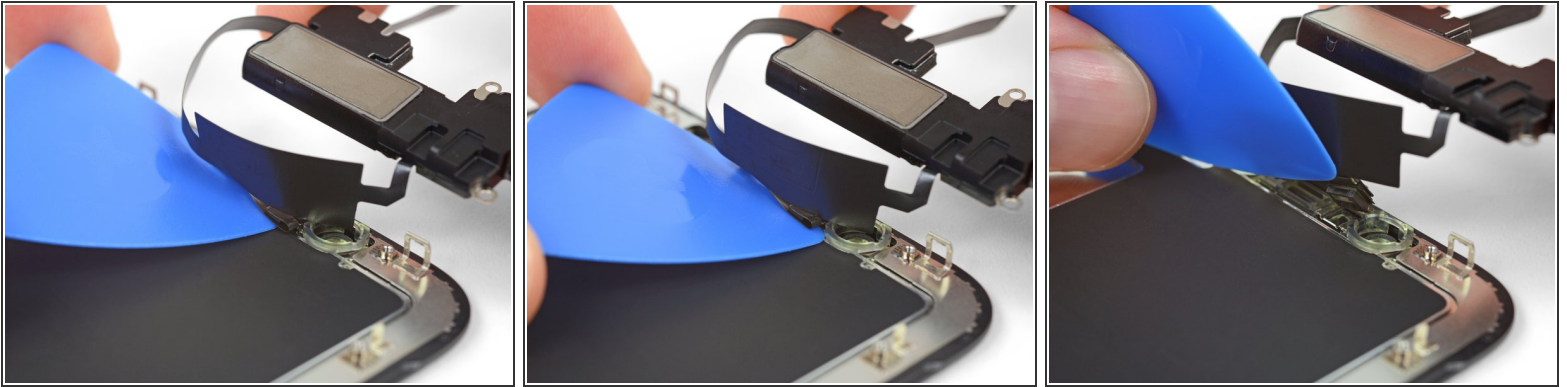
- Use a hairdryer or heat gun or [prepare an iOpener](#) and apply it to the top front of the display for about a minute, in order to soften the adhesive securing the sensors.

Step 25



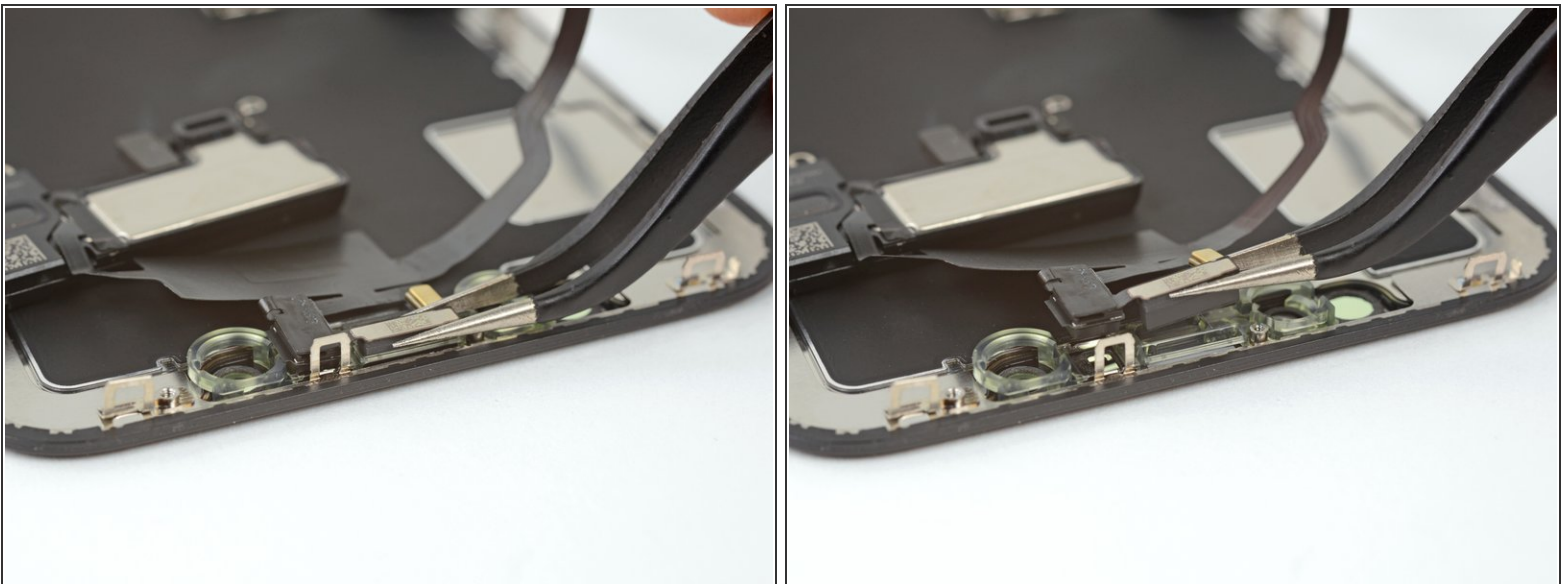
- Carefully slide the flat edge of your spudger underneath the flex cable below the microphone.
- Twist gently to separate the microphone, while being careful not to strain or damage the flex cable.
- If needed, use the point of the spudger to finish separating the microphone from its notch in the front panel.

Step 26



- Working left to right, slide an opening pick beneath the flex cable and underneath the proximity sensor + flood illuminator module.
 - Gently wiggle and lift to separate the module from its notch in the front panel.
- i** It's helpful to lift and hold the speaker out of the way for access. Just be careful not to pull on the thin flex cable while you work.

Step 27



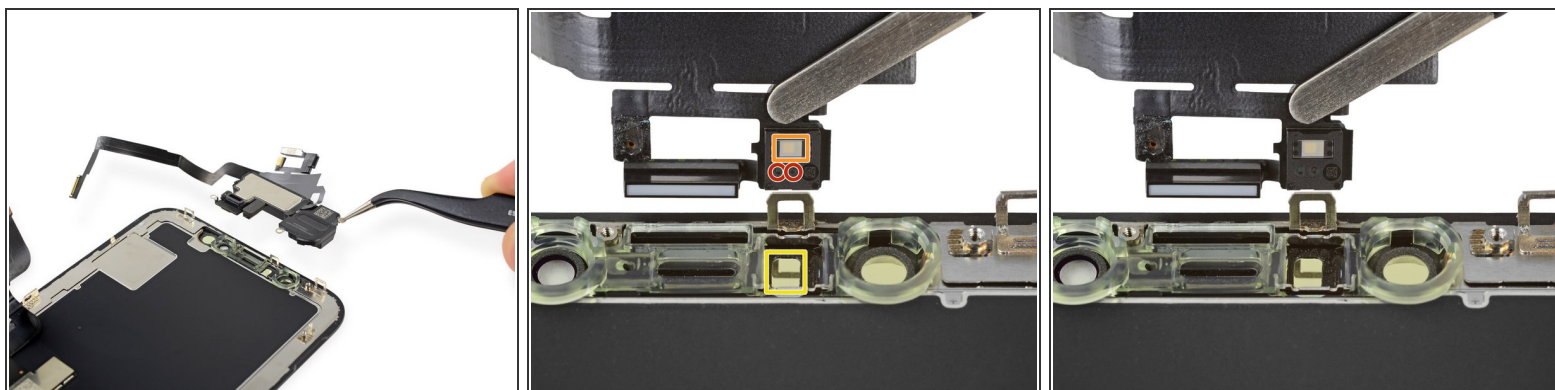
- Use tweezers to wiggle the ambient light sensor and lift it from its notch in the display.
- i** The sensor remains attached to the rest of the sensor assembly via a very thin flex cable. Be careful not to strain or damage the cable.

Step 28



- If you successfully removed the entire ambient light sensor, as shown in the first photo, continue to the next step below.
- If the white diffuser strip detached and remains embedded in the display, as shown in the second photo, you will need to carefully lever it out along the top edge using a thin blade or pry tool. Re-applying heat first may make this task a bit easier.
- ★ During reassembly, install the diffuser into the display first, making sure it faces the right direction (the front-facing side is shown in the first image, and the rear-facing side is shown in the third).
- ★ Then, set the ambient light sensor on top of the diffuser. You will need to hold the sensor in position while installing the screws securing the earpiece/sensor assembly. Once the screws are tightened, the sensor will stay in place and work normally.

Step 29



- Remove the earpiece speaker and front sensor assembly.
- ☑ During reassembly, check the position of the black plastic module containing these components:
 - Proximity sensor
 - Flood illuminator
- The module must be positioned so that these components are not obstructed by any 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? Check out our [Answers community](#) for troubleshooting help.