



# iPhone 3GS GPS Antenna Replacement

Replace a faulty GPS antenna in an iPhone 3GS.

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# INTRODUCTION

How to replace the GPS antenna.

## TOOLS:

- [Phillips #00 Screwdriver](#) (1)
- [Suction Handle](#) (1)
- [Spudger](#) (1)

## Step 1 — Broken Glass



- If your display glass is cracked, keep further breakage contained and prevent bodily harm during your repair by taping the glass.
- Lay overlapping strips of clear packing tape over the iPhone's display until the whole face is covered.
- *i* This will keep glass shards contained and provide structural integrity when prying and lifting the display.

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

## Step 2 — Battery



- Remove the two 3.7mm Phillips #00 screws from the dock-connector end of the iPhone.

## Step 3



- Remove the metal handle from the suction cup. It's easier and safer to grip the suction cup's base instead of the metal handle.
- ⚠ Be very careful when opening the iPhone so that the cables under the display are not severed.
- ⓘ There is a rubber gasket between the silver front bezel and black display assembly. A bit of force is required in this step to separate the iPhone's display assembly. It may help to rock the suction cup back and forth to remove the display assembly.
- Use a small suction cup near the Home button to gently pull up the bottom portion of the iPhone's display assembly.
- ⓘ If the display assembly is too damaged to allow the suction cup to adhere, tape with a strong adhesive such as duct tape or packing tape may be used.

## Step 4



*(i)* The display assembly is still connected to the iPhone by several cables, so don't try to remove it entirely just yet.

- Rotate the display assembly up until it is at an angle of approximately 45 degrees.

## Step 5



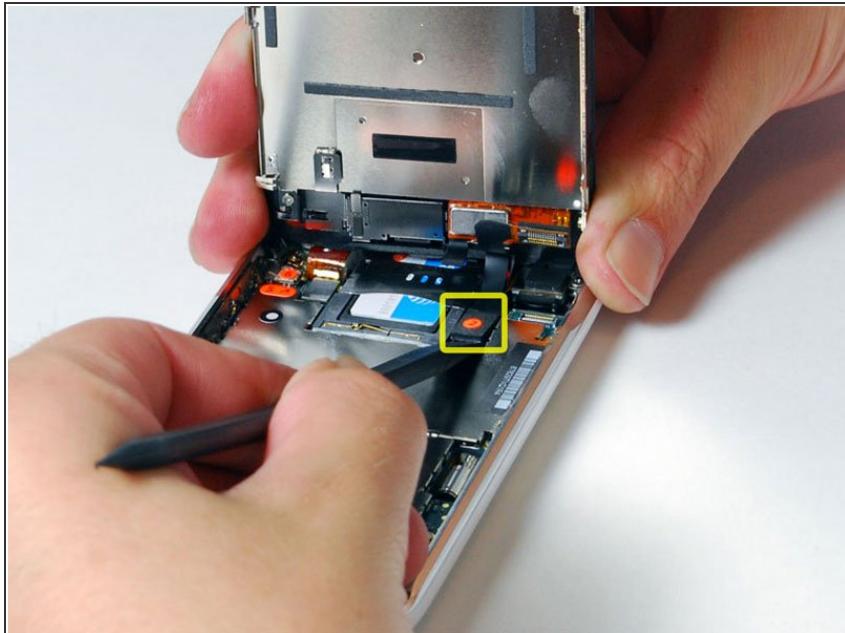
- Continue to hold the display assembly with one hand, and use your other hand and a spudger to

disconnect the black ribbon cable labeled "1". (Cable 1 is for the display)

 Be careful to insert the spudger from the left, as shown in the picture (UNDER THE RIBBON). If you try to pry up the ribbon from the right, you could damage the ribbon connector and need to replace the display!

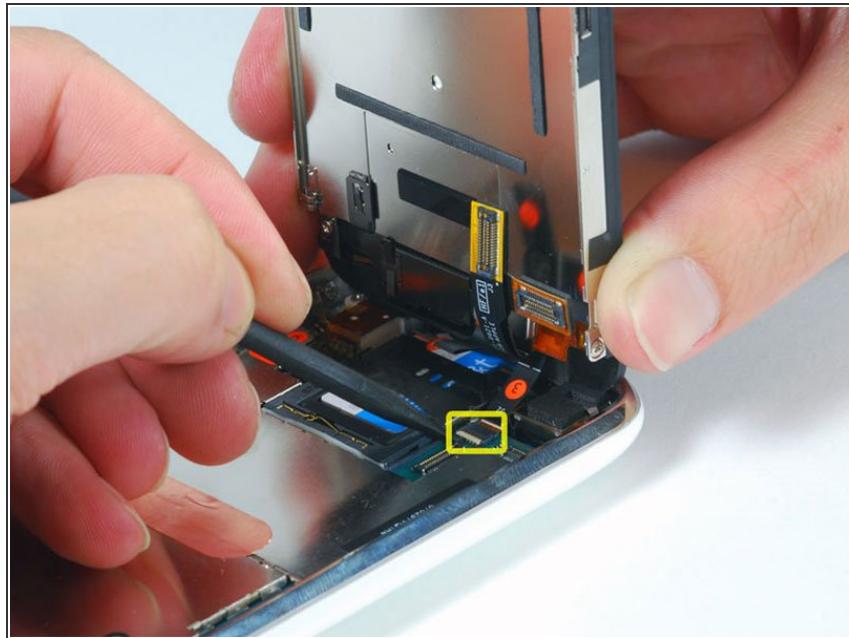
 All connectors except the ribbon connector "3" mentioned in step 7 release upwards.

## Step 6



- Rotate the display assembly up until it is roughly vertical. This will allow easier access for disconnecting the remaining cables.
- Use a spudger to disconnect the black ribbon cable labeled "2". (Cable 2 is for the capacitative touch panel)

## Step 7



**⚠** Please note: You may find on some non-American (Chinese, European) versions of the 3G that the flip up plastic tab does not exist. In this case you would slide the ribbon cable towards the screen until it is removed. When you assemble it, you would apply pressure to the ribbon to insert it back into the ribbon "socket."

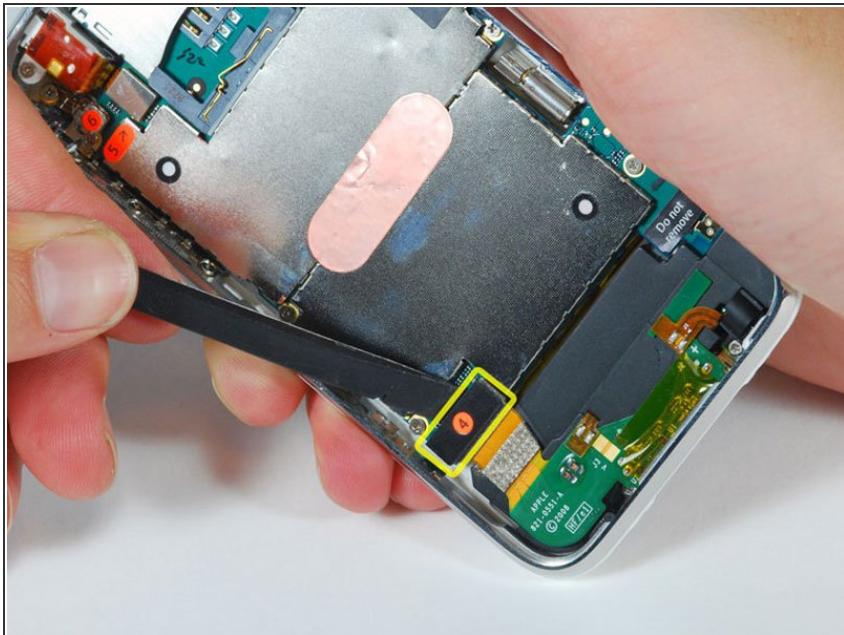
- ⓘ Some iPhones may have the connector colors reversed (black plastic tab, white connector) for connector "3". Make sure you're flipping up the tab properly, otherwise you may damage the connector.
- Use a spudger to flip up the white plastic tab holding the ribbon cable "3" in place. The white tab will rotate up 90 degrees, releasing the ribbon cable.
- Slide the black ribbon cable out of its connector, and remove the display assembly from the iPhone.

## Step 8



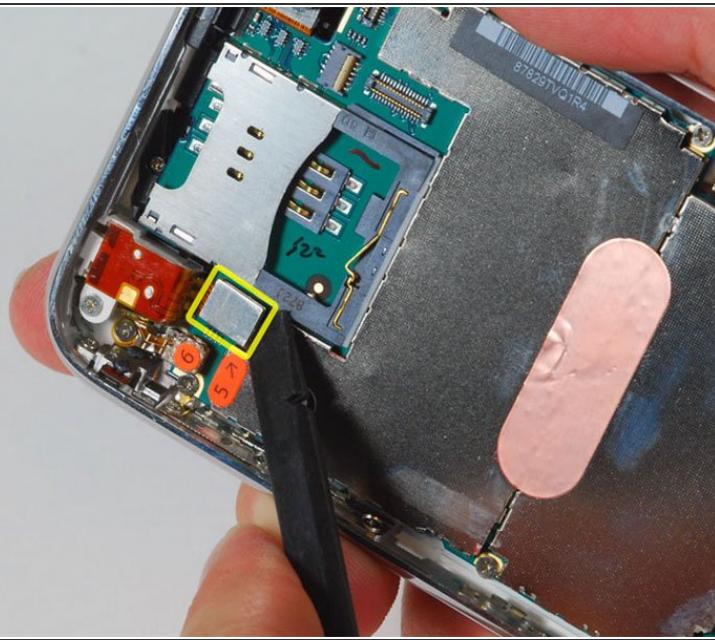
- Insert your SIM eject tool or a paper clip into the hole next to the headphone jack.
- Press down on the tool until the SIM card tray pops out.
- Grasp the SIM card tray and slide it out of the iPhone.

## Step 9



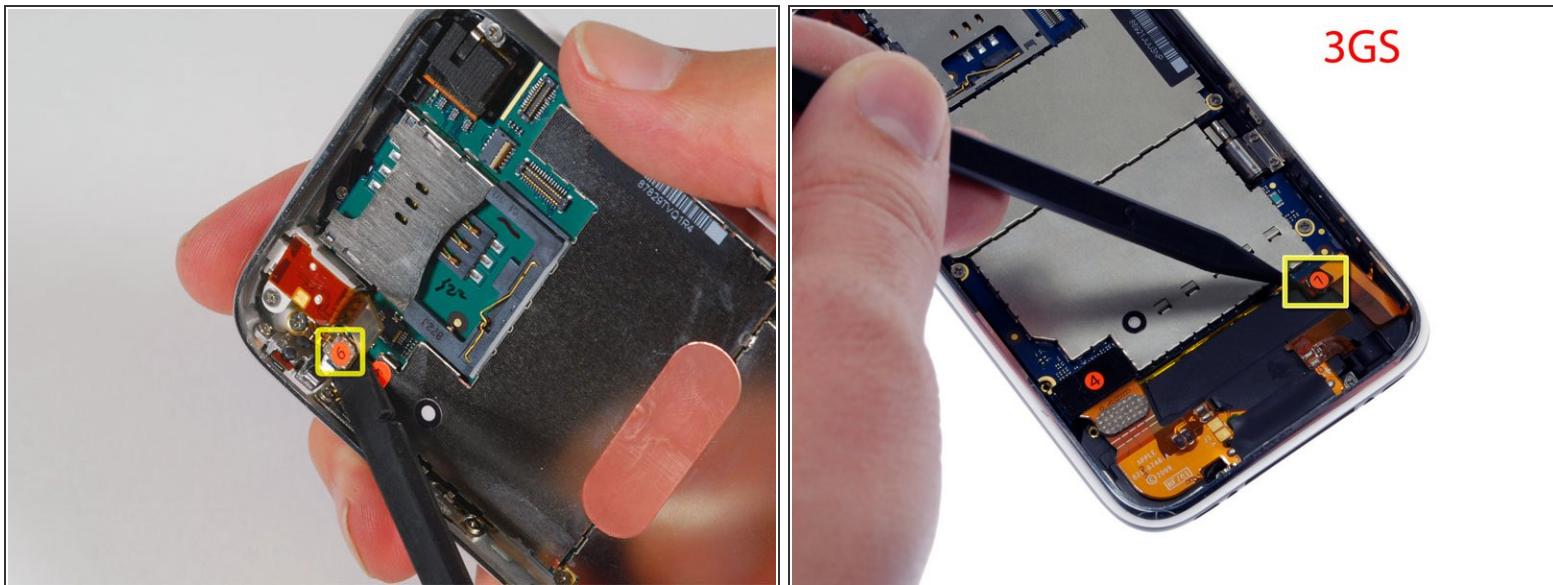
- Use a spudger to disconnect the ribbon cable labeled "4."

## Step 10



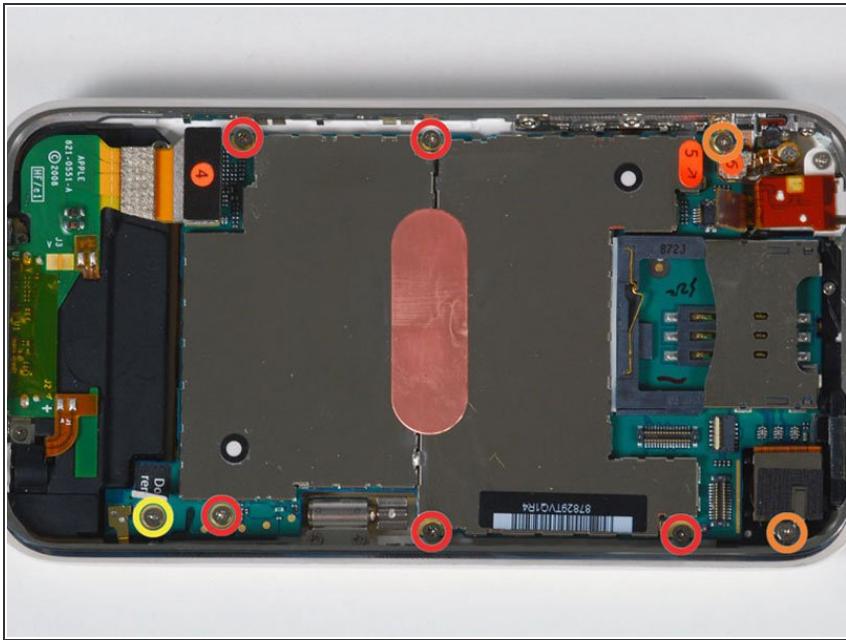
- Use a spudger to disconnect the ribbon cable labeled "5."

## Step 11



- Use a spudger to disconnect the ribbon cable labeled "6."
- i* If you have an iPhone 3GS, refer to the second picture and use a spudger to disconnect the ribbon cable labeled "7."
- i* Be certain that the connectors on the ribbon cables are perfectly aligned with the sockets on the mother board before applying pressure. This may require a magnifying glass or jewelers' loupe.

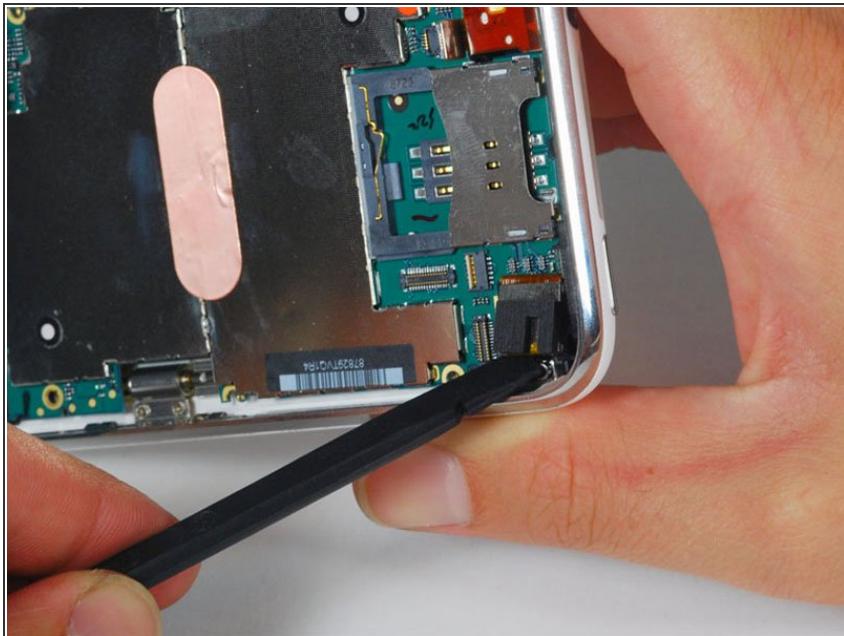
## Step 12



- Remove the following 8 screws:
  - Five 2.3 mm Phillips #00 screws with partial threads securing the logic board to the rear case.
  - Two 2.3 mm Phillips #00 screws with full threads securing the logic board and camera.
  - One 2.9 mm Phillips #00 screw from beneath the "Do not remove" sticker.
- Note for re-assembly:
  - The screw that goes next to the camera (bottom right orange highlighted screw) also has a metal strip that holds the camera in place.

 Remember to put this strip back in place before you insert the 2.3 mm Phillips #00 screw with full thread next to the camera

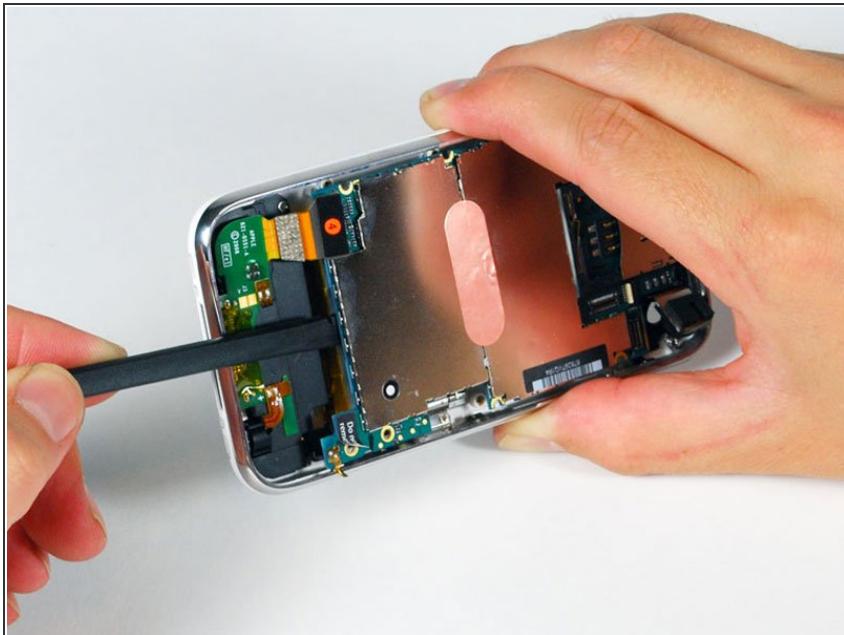
## Step 13



- Use a spudger to gently pry the camera up and out of its housing in the rear case.

**⚠** The camera cannot be removed entirely yet because it's connected to the bottom of the logic board.

## Step 14

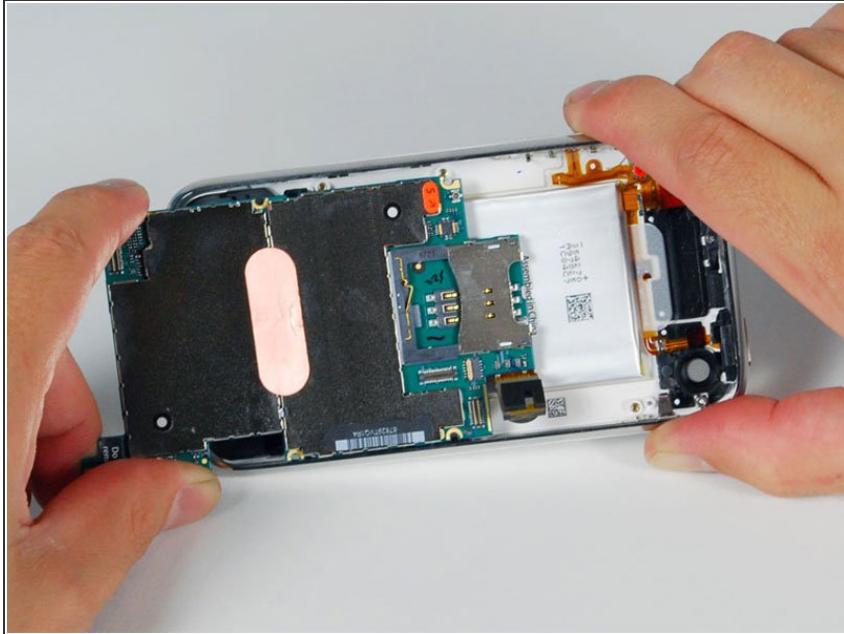


- Use a spudger to gently pry up the end of the logic board closest to the dock connector.

**⚠** There is a small golden grounding tab on logic board adjacent to the 'do not remove sticker'. Be VERY careful this does not snag on the side of the case when prying up the logic board; it breaks easily. If you have signal problems after removing the logic board, check this ground tab.

**i** If the board won't lift up, double check to make sure all the screws securing the logic board have been removed.

## Step 15



- Slide the logic board towards the dock connector and out of the iPhone.
- When replacing the logic board after installing battery, connect the camera to the logic board before inserting it into the case. Then make sure to set the top section of the logic board (where the SIM tray is) in place before settling the rest of the board in place. This is important, as sometimes the SIM card slot will not align into place. Once the top section is in place, the bottom section can be maneuvered into place. You will know the logic board is correctly installed when the SIM tray is aligned with the opening in the iPhone case and the camera module seats neatly into its place.

## Step 16

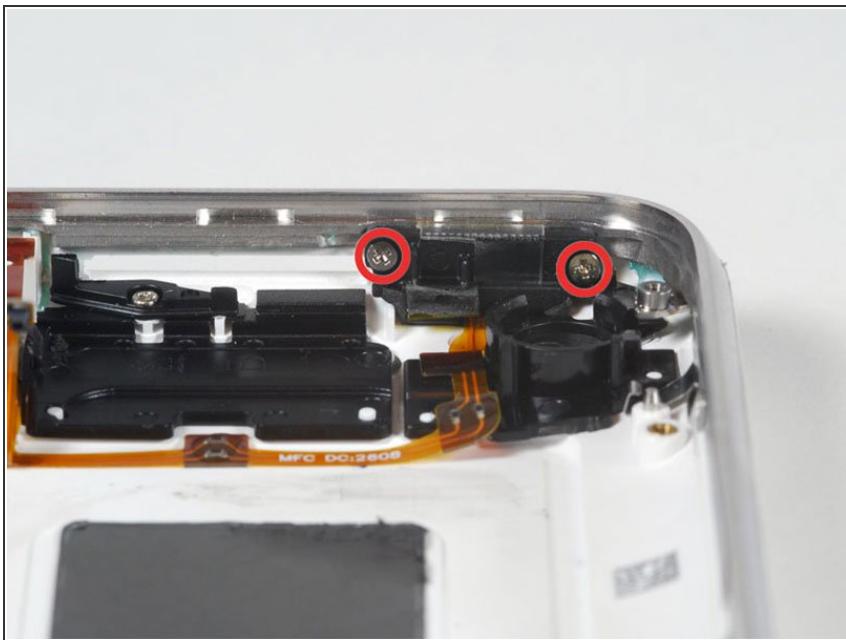


- Use a spudger to pry the battery up from the rear case. The battery is attached with an adhesive strip around the perimeter of the battery. To prevent the battery from bending during the removal process, we recommend against using just the plastic pull-tab. \*Note: Removing the battery is NOT necessary for replacing the GPS antenna. It merely gives you more space for removing the headphone assembly (which is also unnecessary to completely remove).

 The iPhone's battery is attached to the rear case with a mild adhesive. This adhesive usually comes out attached to the battery. If your replacement battery already includes an adhesive backing, you're all set. If your replacement battery doesn't have an adhesive backing, you'll want to transfer the adhesive from your old battery to the new one.

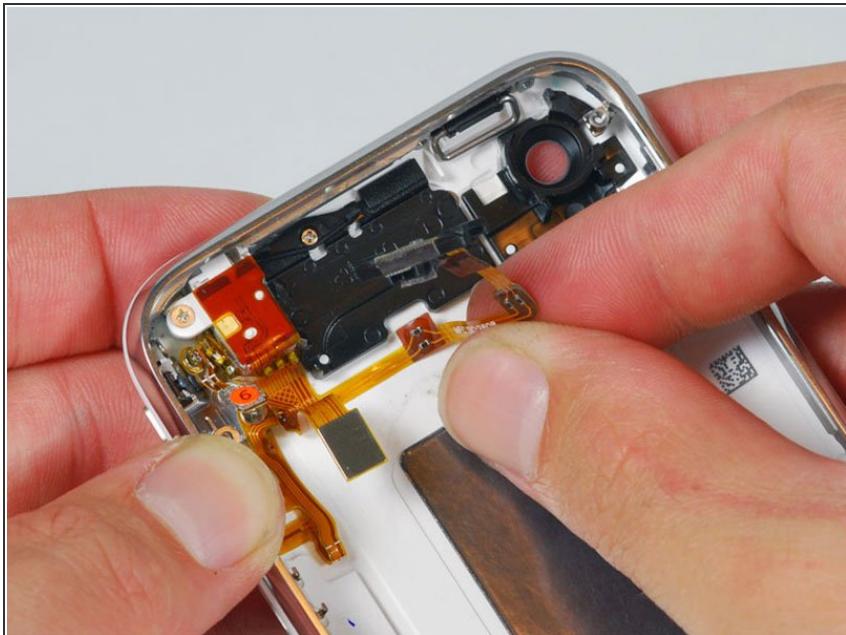
 You can use a hair dryer or heat gun on its lowest setting to heat the back of the case. This will help loosen the adhesive bond before using the spudger to separate the battery from the case back.

## Step 17 — Headphone Jack



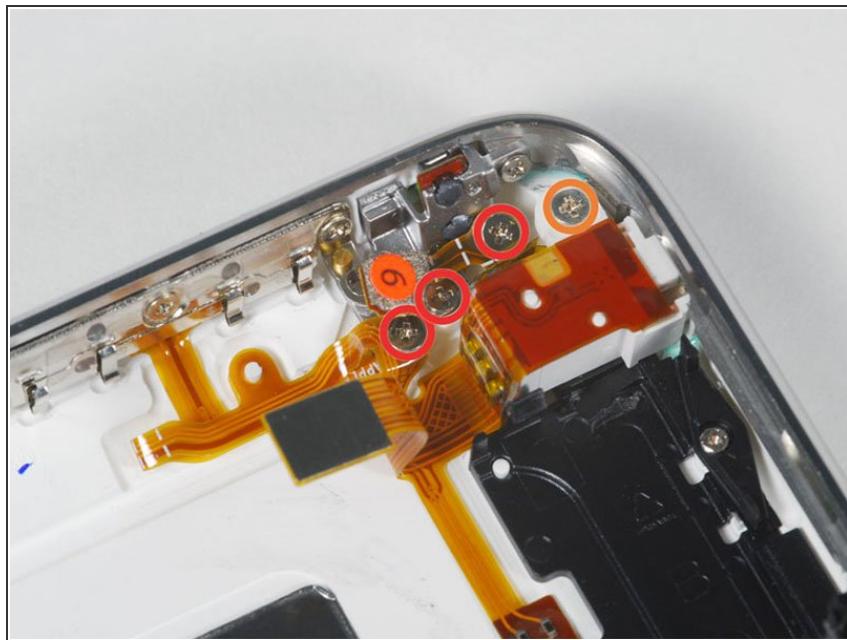
- Remove the two Phillips #00 screws securing the on/off switch to the front bezel.
- *When replacing, check the protrusion of the switch. There is a small plastic spacer adhered to the inside of button which may come off with cleaning. Without a spacer, the button may not protrude enough to be depressed. If lost, it can be replaced with a suitable thickness of stiff plastic (eg shirt box lid).*

## Step 18



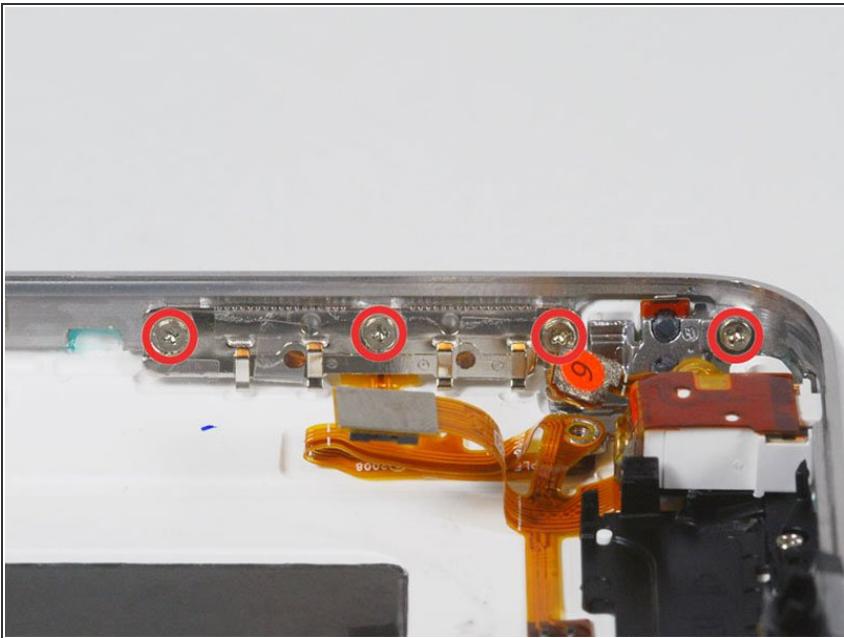
- Carefully peel up the orange ribbon cable from the rear case.
- **⚠** The ribbon cable is easily damaged - be very gentle.

## Step 19



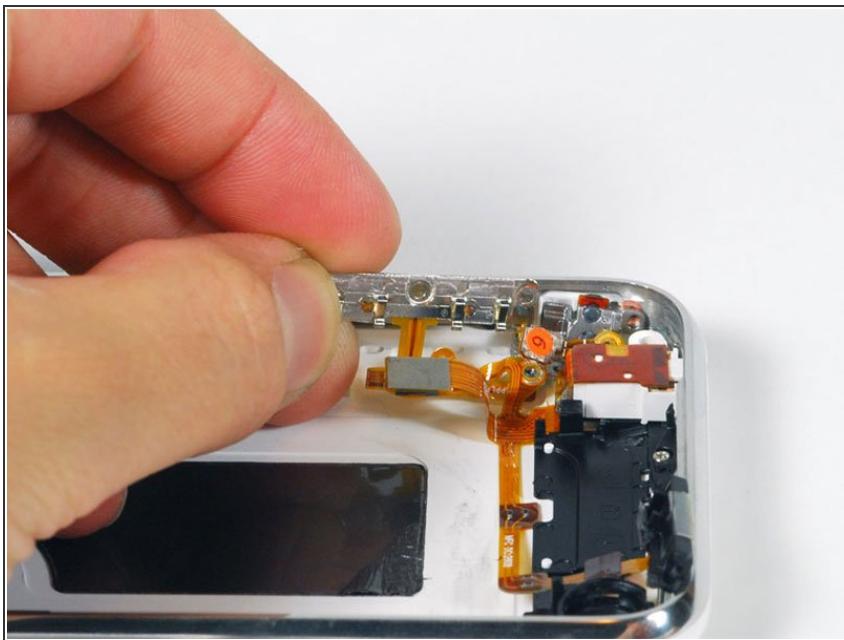
- Remove the following 4 screws:
  - Three 1.8 mm Phillips #00 screws securing the headphone jack and GPS antenna to the rear case. Note the order in which you remove the screws, as the left one has a slightly larger head.
  - One 3.8 mm Phillips #00 screw in the plastic loop near the headphone jack.

## Step 20



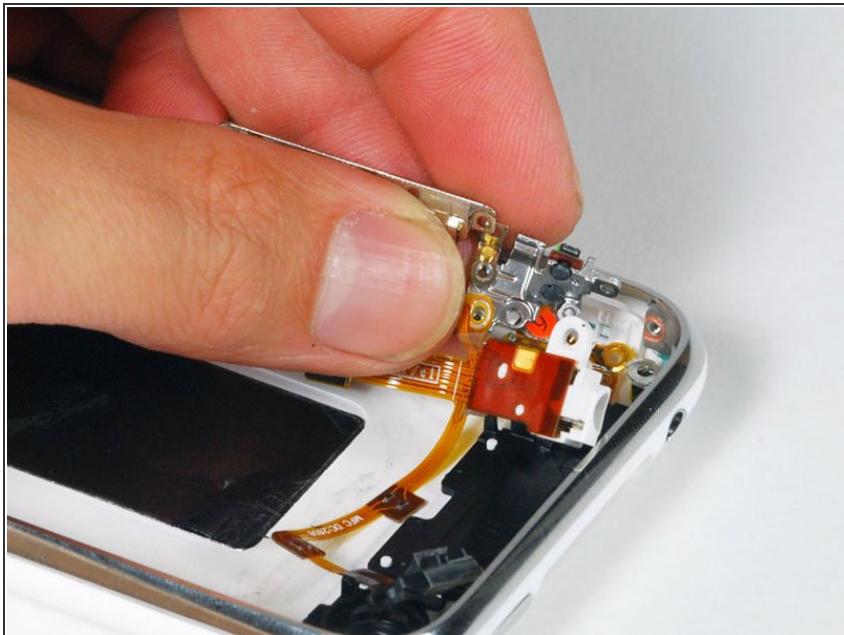
- Remove the four Phillips #00 screws securing the volume and mute switch.
- *(i)* The volume switch assembly sits on top of the mute switch. Make sure that the small soft pad on the mute switch is not lost, otherwise the mute switch will sit very loosely after reassembly.
- The mute switch assembly screws should be tightened with the switch in the off position. Check the protrusion of the switch when turned on, since it may not stick out far enough to operate if the switch assembly is incorrectly positioned. (Check the gap between the switch frame and the bezel (white gap showing between the two screws near the 6). The screw on the far right is slightly longer than the other 3 screws. When reassembling the phone, keep this in mind.

## Step 21



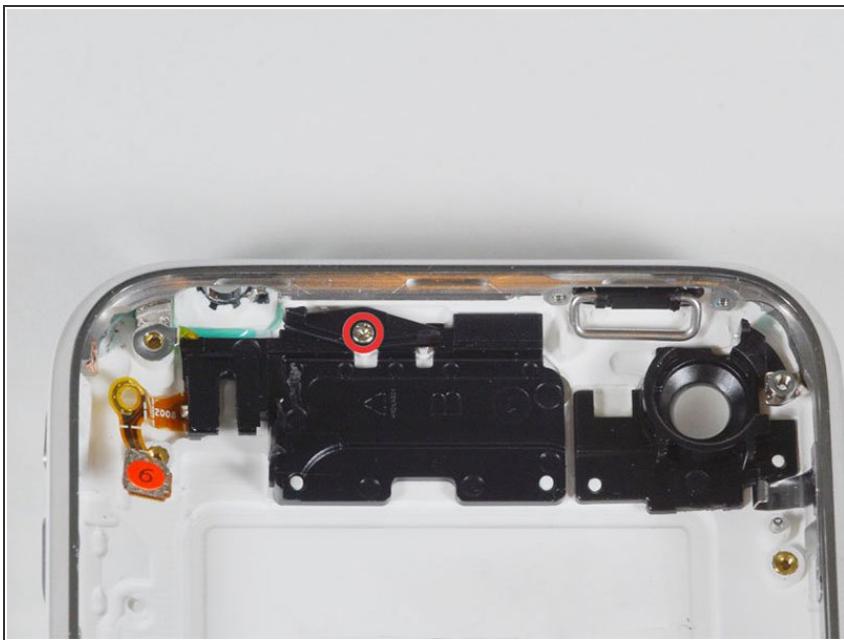
⚠ Lift the volume button circuitry away from the side of the iPhone, and carefully peel up the orange ribbon cable from the rear case. The cable is thin and easily damaged.

## Step 22



- Carefully lift the headphone jack assembly out of the iPhone.
- Switch the green mute switch down (towards the back side of the iPhone) into mute position. This will make it much easier to insert it, once the new mute button is in place.

## Step 23 — GPS Antenna



- Remove the single 2.4mm Phillips #00 screw securing the black plastic spacer.

*Some replacement rear panels may not have a threaded screw hole in this location.*

## Step 24



- Use a spudger to pry up the black plastic antenna housing from the rear panel.
- Lift the black plastic GPS antenna housing out of the iPhone.

To reassemble your device, follow these instructions in reverse order.