



iRobot Roomba 650 Bumper Sensor IR Transmitter Replacement

Follow this guide to fix and replace your bumper sensor if it is not functioning.

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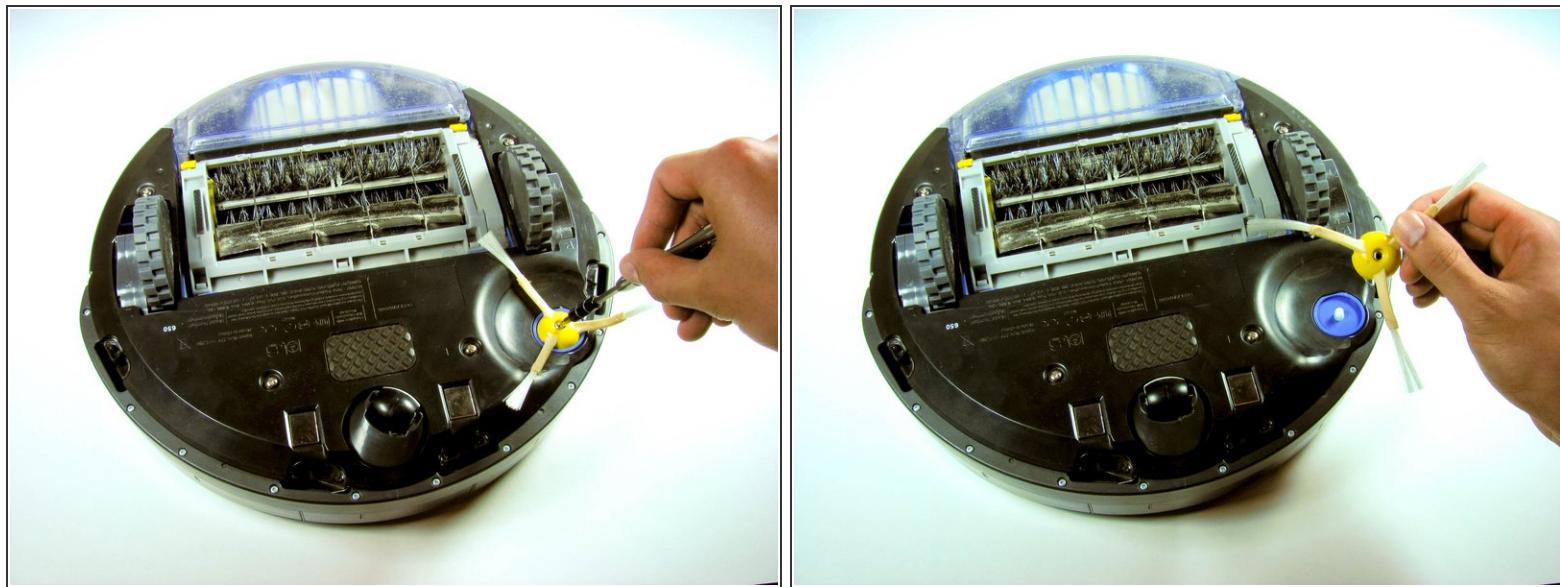
INTRODUCTION

This will involve getting deep into Roomba's inner core and removing the motherboard. The IR transmitter is a small blue device housed in a black plastic casing towards the front of the Roomba. This infrared sensor helps the Roomba to locate itself and detect its surroundings.

TOOLS:

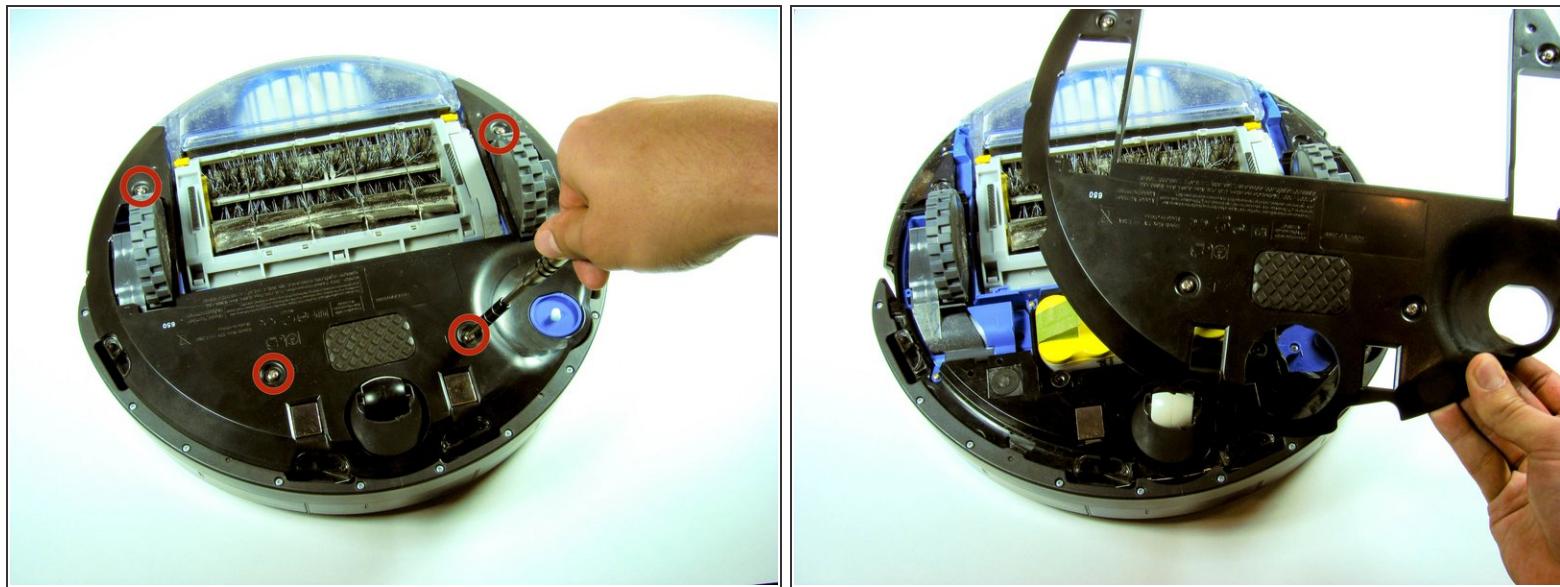
- [Phillips #0 Screwdriver \(1\)](#)
- [Soldering Iron \(1\)](#)
- [iFixit Opening Tools \(1\)](#)
- [Phillips #1 Screwdriver \(1\)](#)
- [Spudger \(1\)](#)
- [Metal Spudger \(1\)](#)

Step 1 — Removing the Side Brush



- With the Roomba upside down and turned off, use the Phillip's 02 screwdriver to remove the one 3.5 mm screw from the center of the side-brush.
- Set the screw aside and pull the brush out.

Step 2 — Bottom Panel Removal



- Unscrew the four screws that hold the bottom panel using the Phillips 02 screwdriver.
- *(i)* The screws will not come out of the bottom panel. They were designed to become loose but not be removed. This prevents you from losing them, and prevents the Roomba from sucking them up if they came out during cleaning.
- Once you are sure that all the screws have been loosened as much as possible, then lift the bottom panel up off the Roomba.

Step 3 — Battery

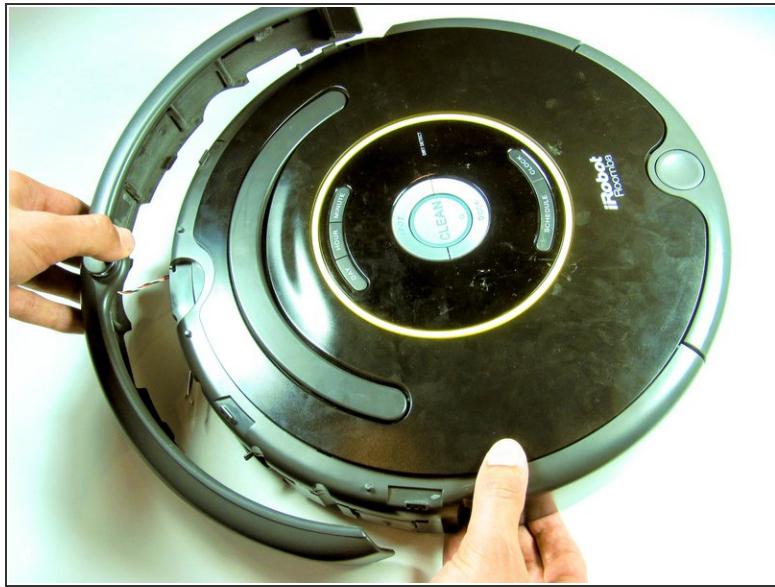


- Once the side brush and bottom panel are out of the way, simply grasp the battery by the two green flaps and pull it out.

⚠ In the unlikely event that the battery has leaked acid, **avoid all contact with it and any surfaces it has affected**. Wear protective gloves and wipe up any residue with a paper towel. Secure the battery in a plastic bag and dispose of it properly.

⚠ If you get battery acid on your skin or in your eye, flush immediately with water and seek medical attention.

Step 4 — Bumper Sensor IR Transmitter



- Remove the front bumper. You may remove it with your hands or a tool. It should snap off with some effort. It will still be attached to the Roomba by a couple of wires.

Step 5



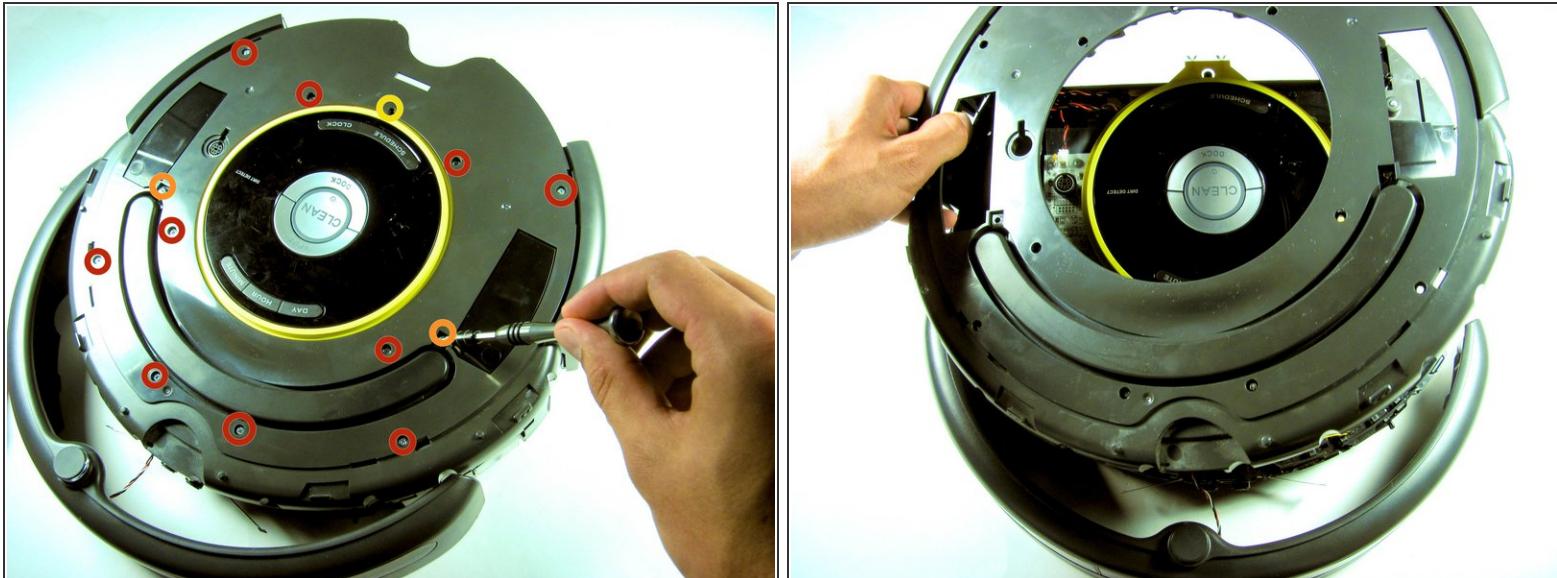
- Pull out the bin while pressing down on the release button. Set aside.

Step 6



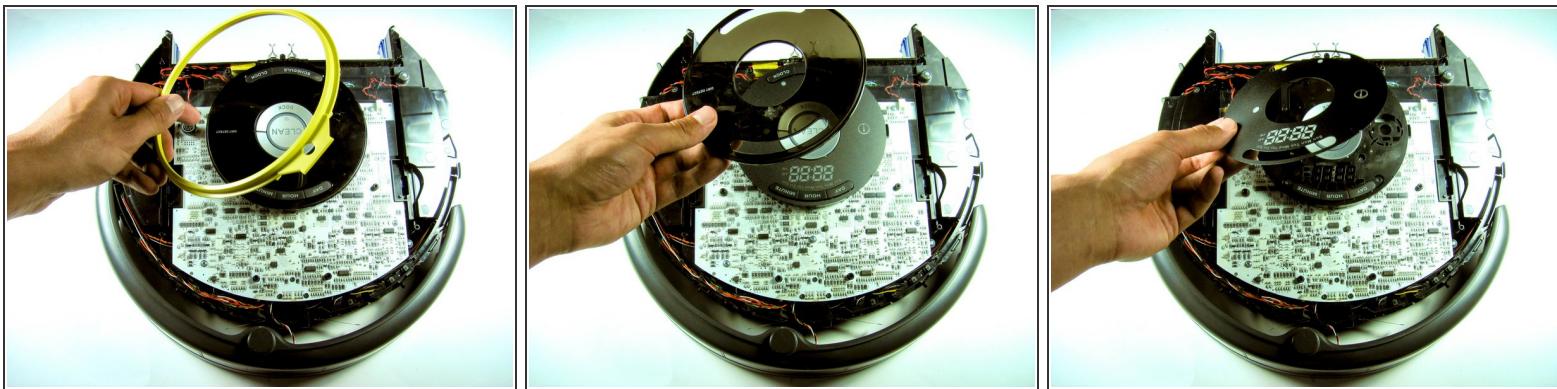
- Remove the top plastic cover by first using a plastic opening tool or metal spudger around the edges. Then, carefully lift up from the back.

Step 7



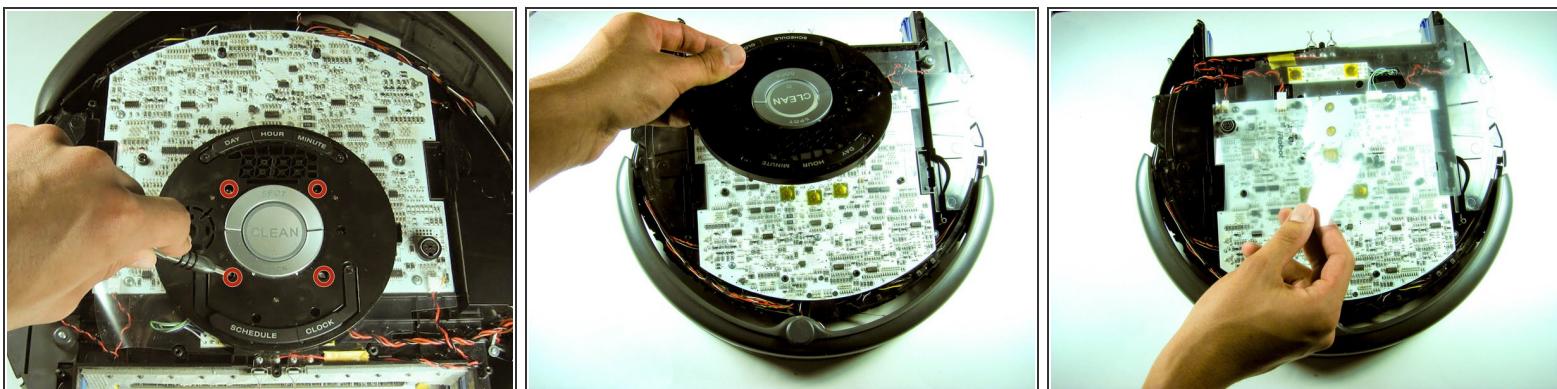
- Use the Phillip's Head #1 Screwdriver to take out the 10 5 mm screws.
- Continue to take out the two 5.5 mm screws with the Phillip's Head #2 Screwdriver.
- Finally, remove the last 7.5 mm screw with the Phillip's Head #1 Screwdriver.
- Lift the panel off and set aside.

Step 8



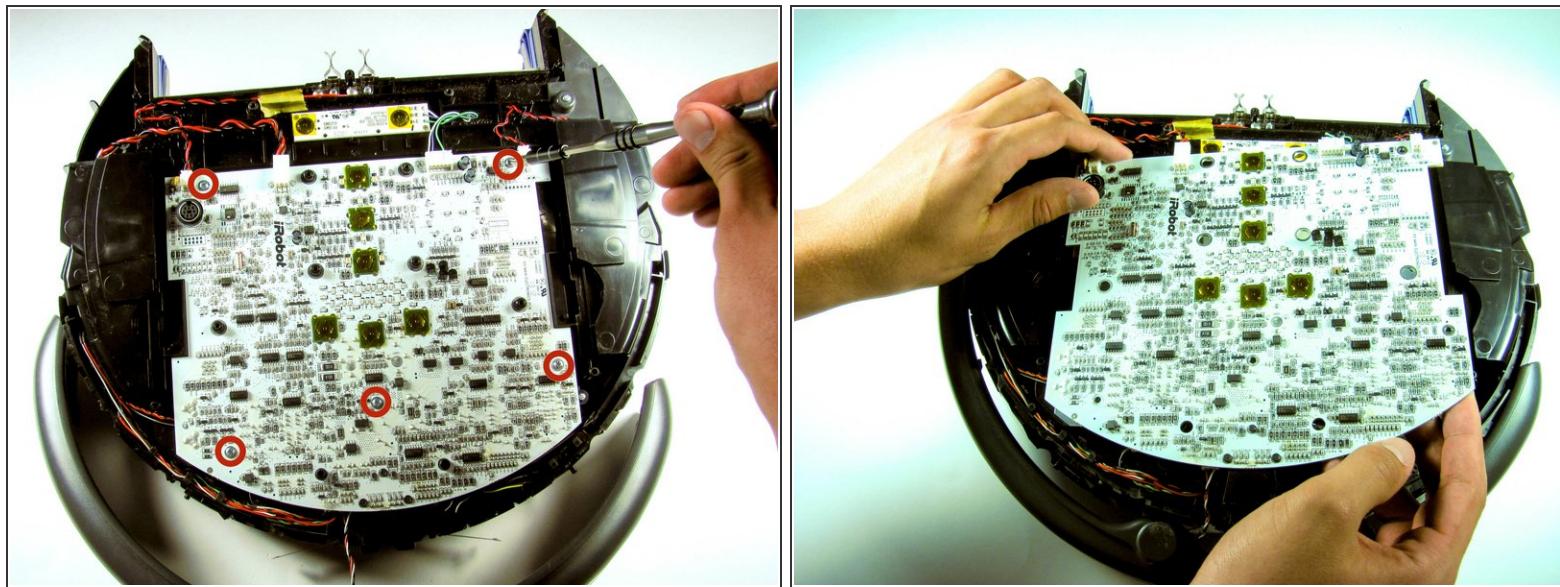
- Remove the yellow ring and the two plastic control panel covers.

Step 9



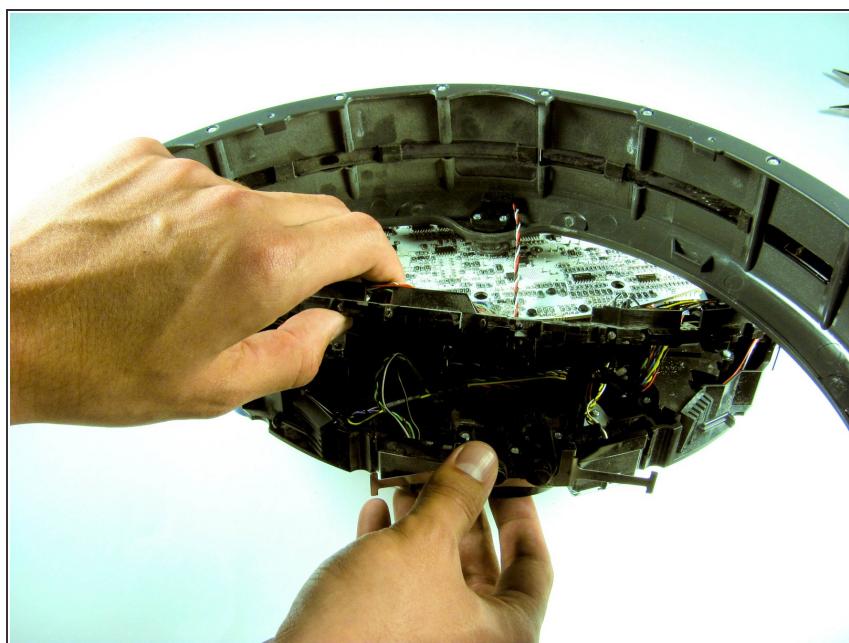
- Use the Phillip's #1 Screwdriver to remove the four 7.5 mm screws that hold the control panel to the motherboard.
- Lift the control panel off, then lift the clear plastic motherboard protecting sheet and set both aside.

Step 10



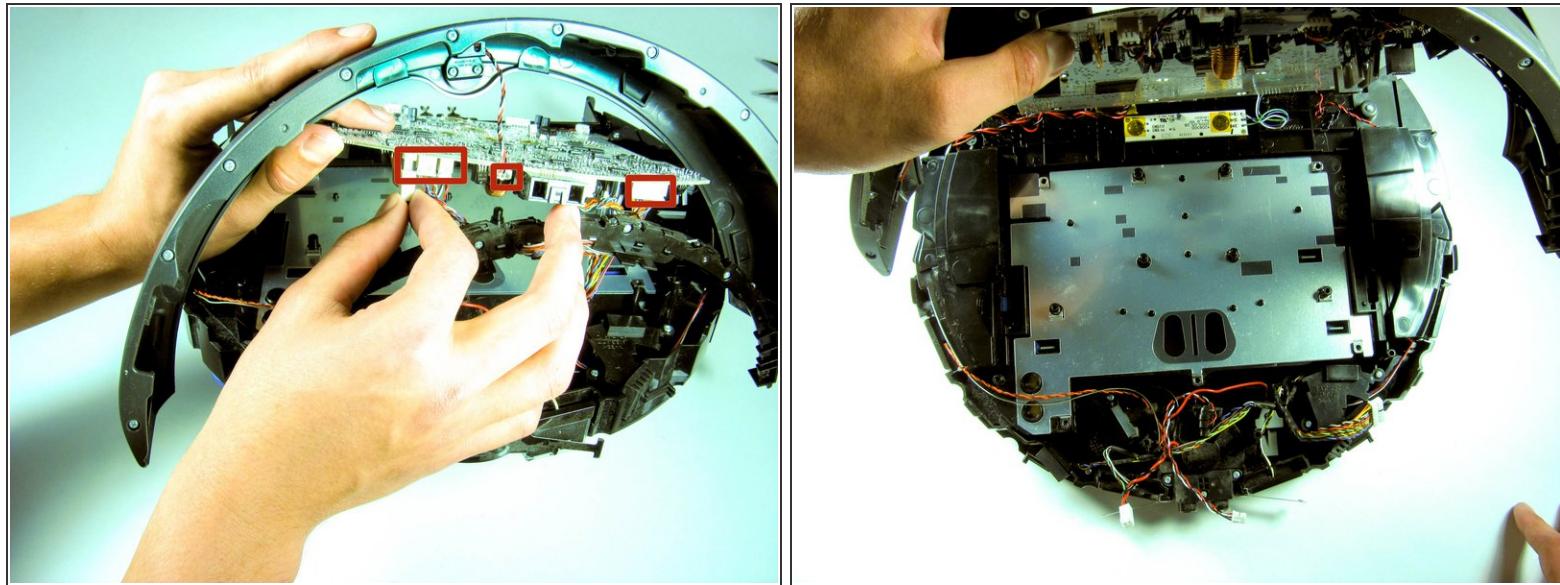
- Use the Phillip's Head #1 Screwdriver to remove the five 5.5 mm motherboard screws.
- Gently lift the motherboard up off the Roomba about half an inch.

Step 11



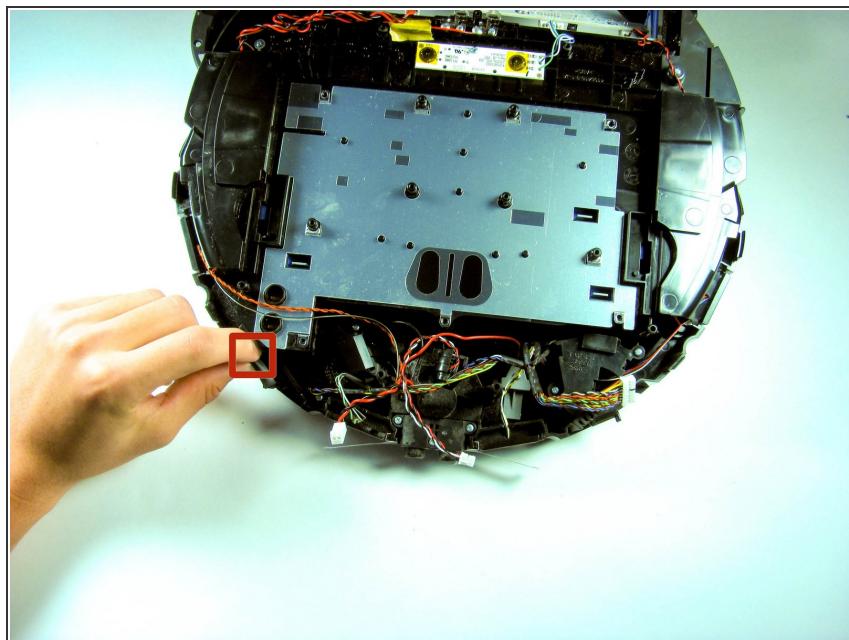
- Remove the round cliff sensor belt by pulling it up off of the front edge of the Roomba.

Step 12



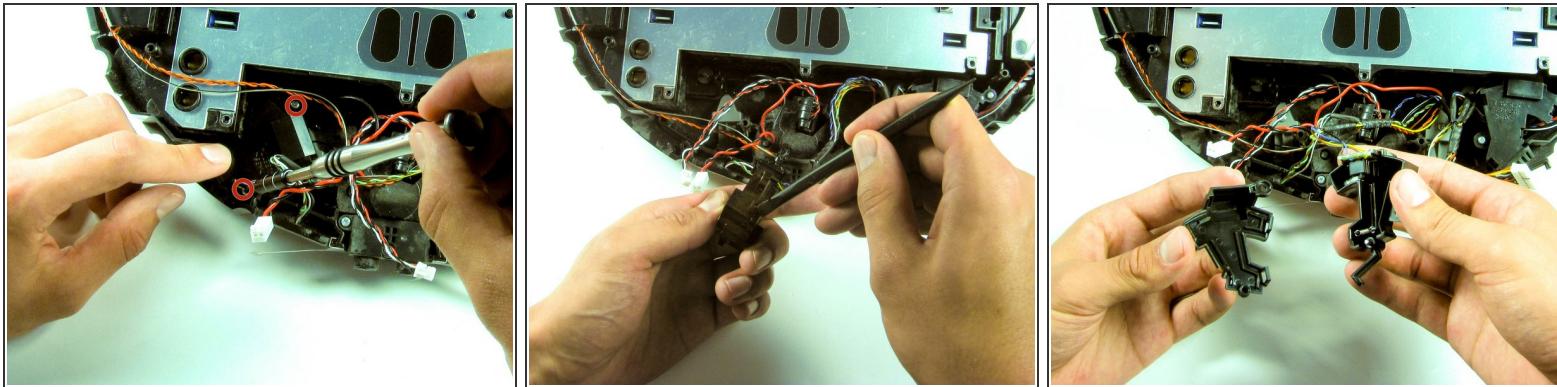
- Disconnect the three cables that attach the motherboard to the front of the Roomba.
- Lift up the motherboard, cliff sensor belt, and front bumper up and out of the way.

Step 13



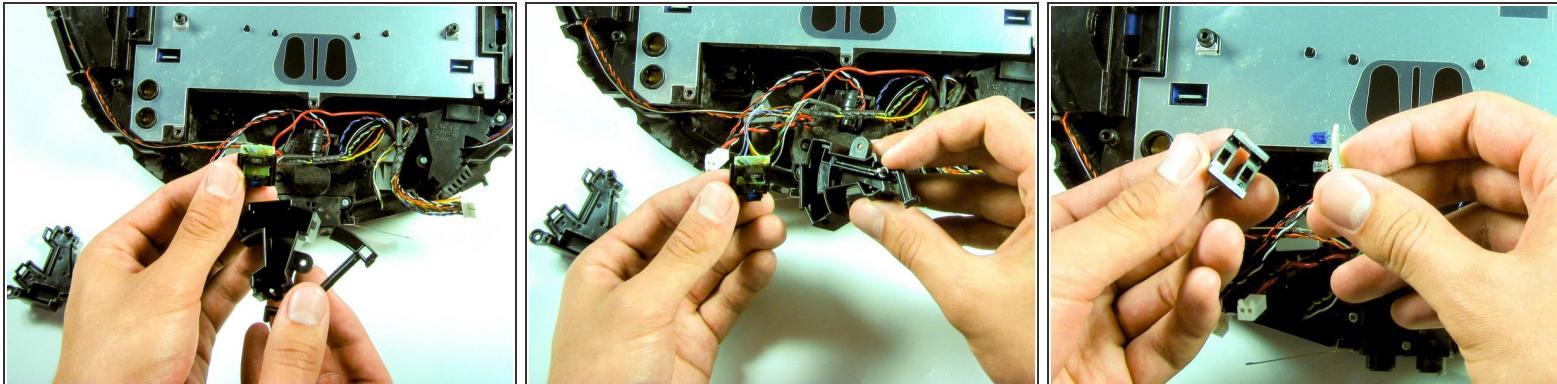
- Remove the rubber cover on the bumper sensor.

Step 14



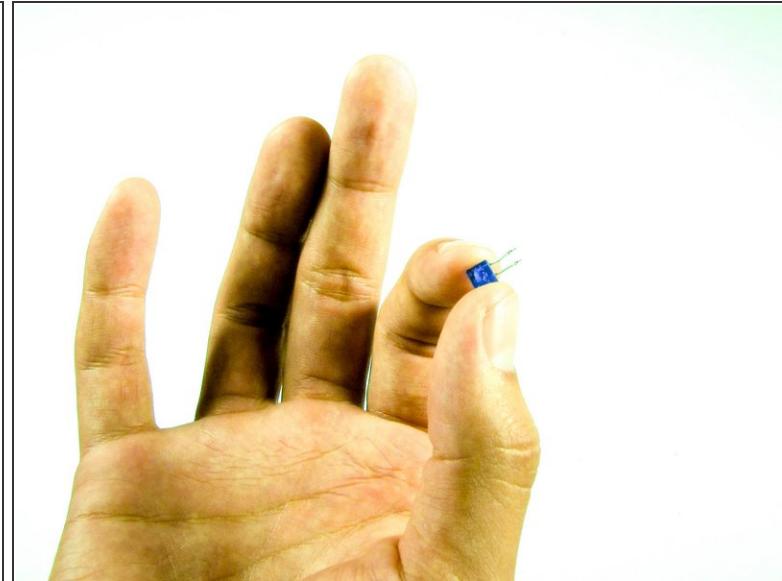
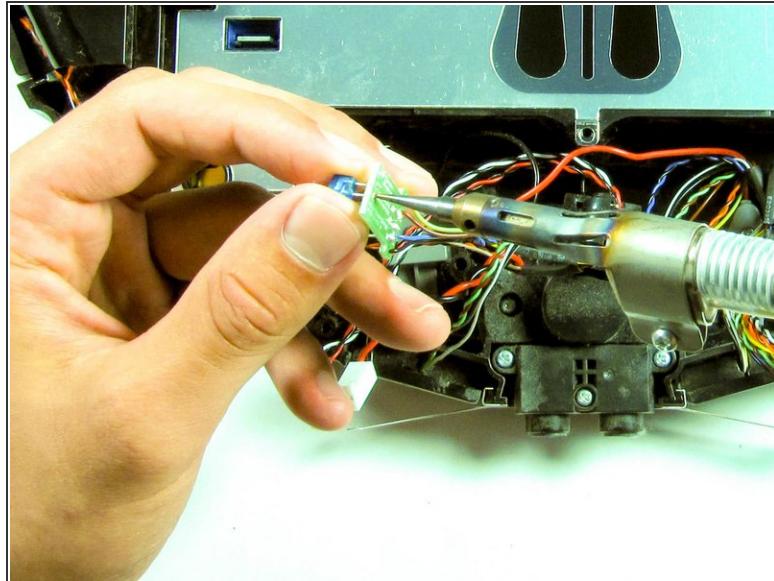
- Use the Phillip's #1 screwdriver to remove the two 7.5 mm screws from the bumper sensor module.
- Pry the module clips open with a spudger or your finger.
- Open the sensor module.

Step 15



- Once the bumper sensor module is open, remove the small IR chip.
- Pull off the black protector surrounding the chip.

Step 16



(i) For this next step, it might be helpful to have another set of hands.

- Use a soldering iron to desolder pins on the blue IR receiver. Try repeatedly warming each pin up and giving a tug on the receiver. It should eventually slide out.
- You will need to then solder in a new receiver in the exact same place you took the old one out.

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