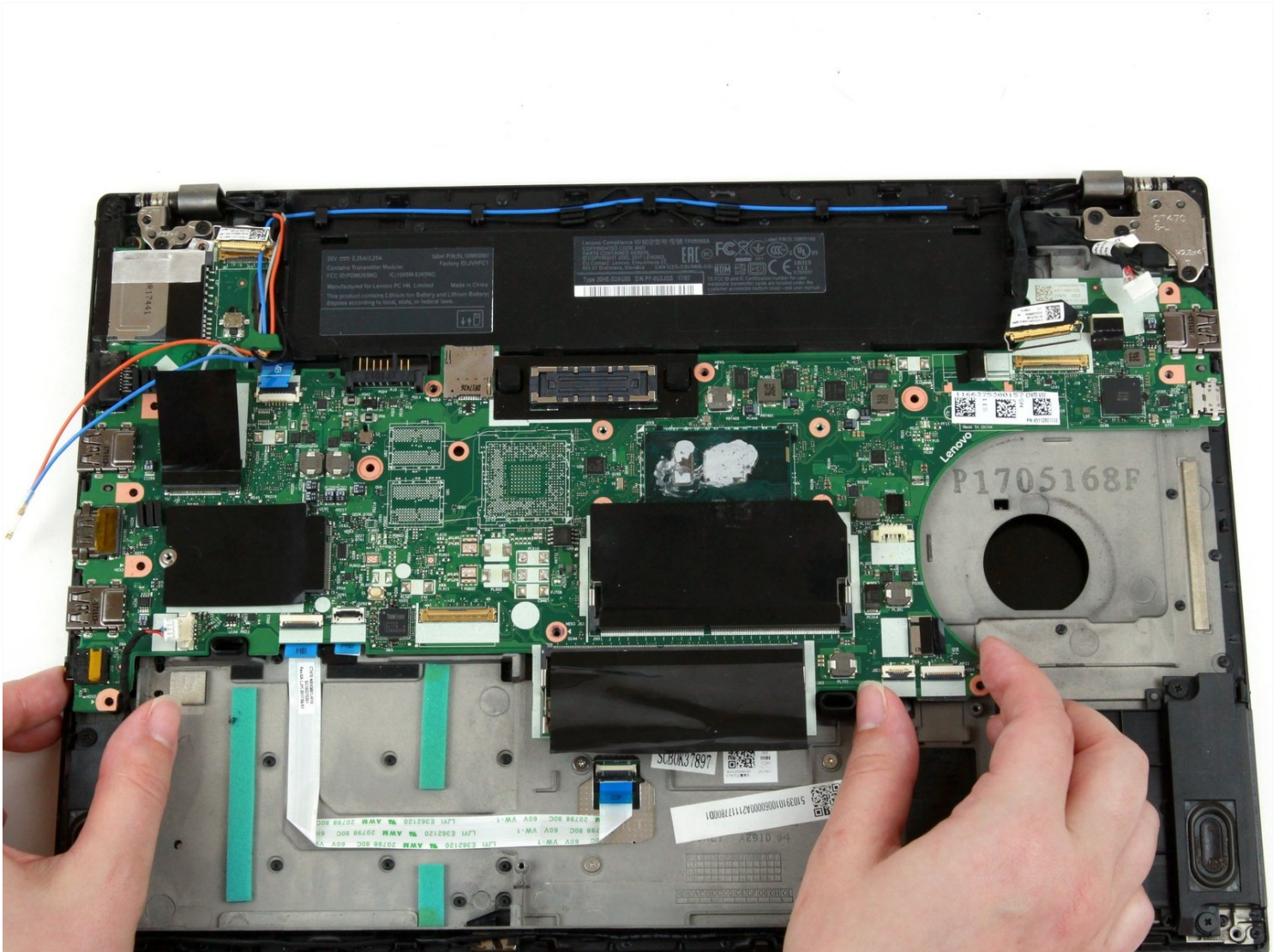




# Lenovo ThinkPad T470 Motherboard Replacement

Use this guide to replace the motherboard in...

Written By: Kristen Gismondi



# INTRODUCTION

Use this guide to replace the motherboard in your Lenovo ThinkPad T470 laptop.

The motherboard, also known as a system board or mainboard, is the primary printed circuit board (PCB) in a computer that enables communication between the internal components.

Diagnosing a faulty motherboard is tricky since the symptoms are similar to other failing components. Signs of a faulty motherboard may include overheating, error codes, the [blue screen of death](#), or failure of other ports and components.

For help diagnosing hardware failures, visit the Lenovo ThinkPad T470 [maintenance manual](#).

Make sure to [disable the internal battery](#), power down your device, and disconnect from any external power sources before you begin.



## TOOLS:

Phillips #1 Screwdriver (1)  
ESD Safe Blunt Nose Tweezers (1)  
Spudger (1)



## PARTS:

01LV671 - Lenovo Laptop Motherboard - Genuine (1)  
01HW535 - Lenovo Laptop Motherboard - Genuine (1)

## Step 1 — External Battery



**⚠ Before you begin this guide, make sure to [disable the internal battery](#), power down your device, and disconnect from any external power sources.**

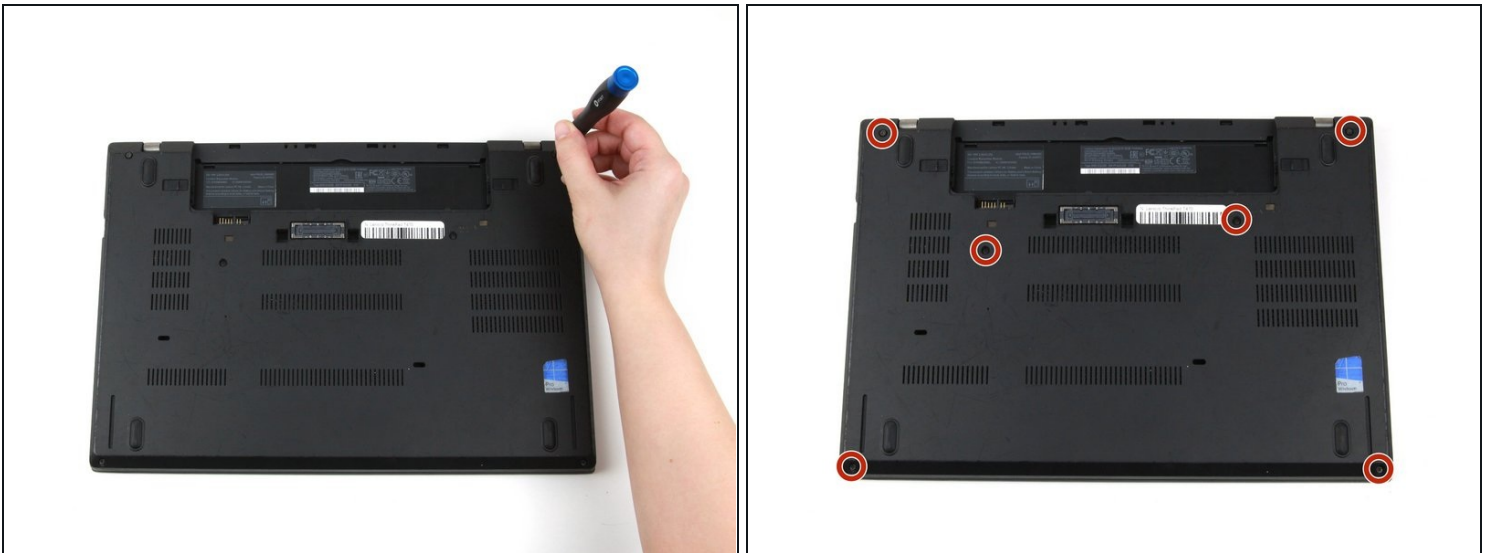
- Place the laptop so that the bottom is facing upwards.
- Slide the latch on the left side of the battery to the left until it clicks in place.

## Step 2



- Slide the latch on the right side of the battery to the right and hold it in place with your thumb.
- Use your other hand to slide the battery towards the back of the laptop.
- Lift the battery up and away from the laptop.

## Step 3 — Internal Components



- Use a Phillips #1 screwdriver to loosen the six captive screws on the bottom cover of the laptop.



## Step 4



- Place the laptop so that the top is facing upwards.
- Open the lid of the laptop.

## Step 5



- Place your fingers on the bottom edge of the keyboard.
- Use a small amount of pressure to push the keyboard towards the screen.



## Step 6



- Grab the bottom edge of the keyboard with your hands, and flip the keyboard upside-down, so it rests on the bottom of the laptop.

⚠ Potential for device damage: The keyboard is still attached to the rest of the laptop, so be gentle when flipping it over.

## Step 7



- Use the flat end of a spudger to flip up the locking flaps securing each of the two ribbon cables.

## Step 8



- Use your hands to lift the keyboard up and away from the laptop.

## Step 9



- Close the laptop's lid and flip the laptop over so that the bottom is facing upwards.

## Step 10



- Use your hands to pull up on the back cover and release the plastic clips starting on the bottom side of the battery compartment.

**⚠ Potential for device damage:** Be sure to detach the plastic clips in this area first. You risk cracking the bottom cover if you attempt to detach it from around the edges of the laptop first.

- Use your hands to pull up on the right side of the bottom cover to release the plastic clips.
- Use your hands to pull up on the left side of the bottom cover to release the plastic clips.

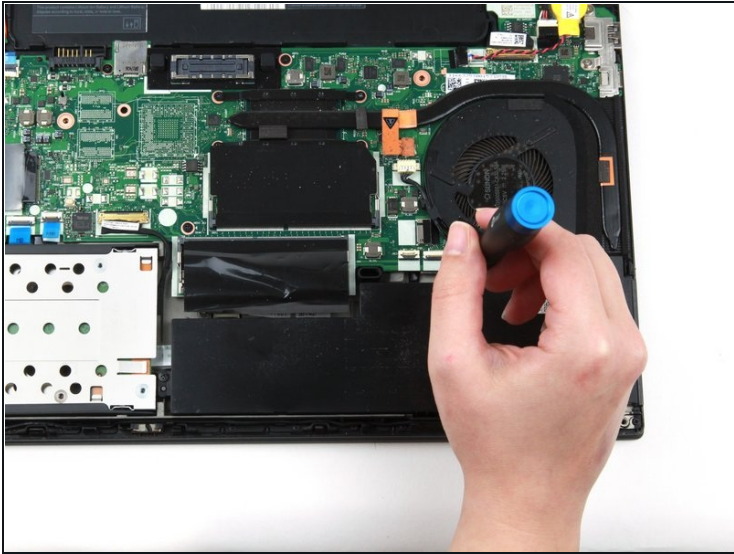
## Step 11



- Remove the bottom cover from the laptop.

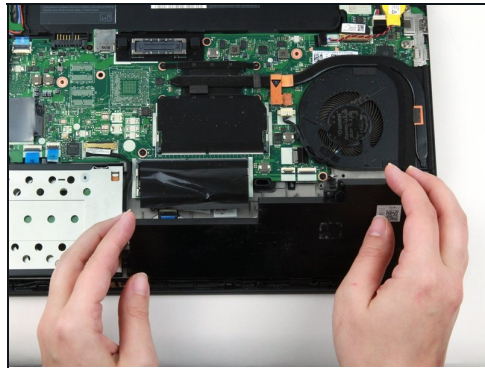


## Step 12



- Use a Phillips #1 screwdriver to remove two 5 mm screws from the internal battery.

## Step 13



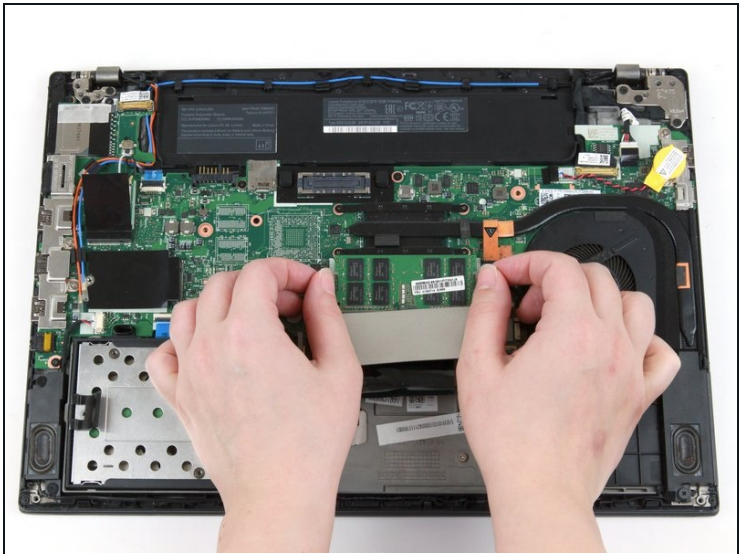
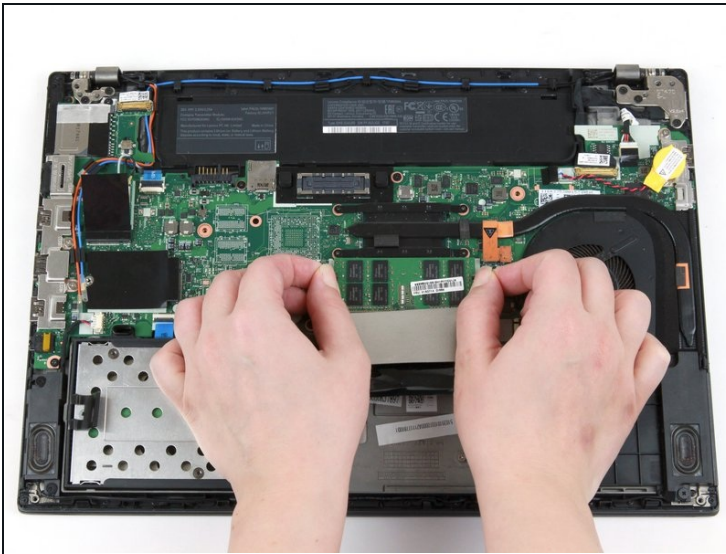
- Use your hands to lift the battery up and away from the laptop.

## Step 14



- Use your fingers to flip the black flap covering the top stick of RAM down.

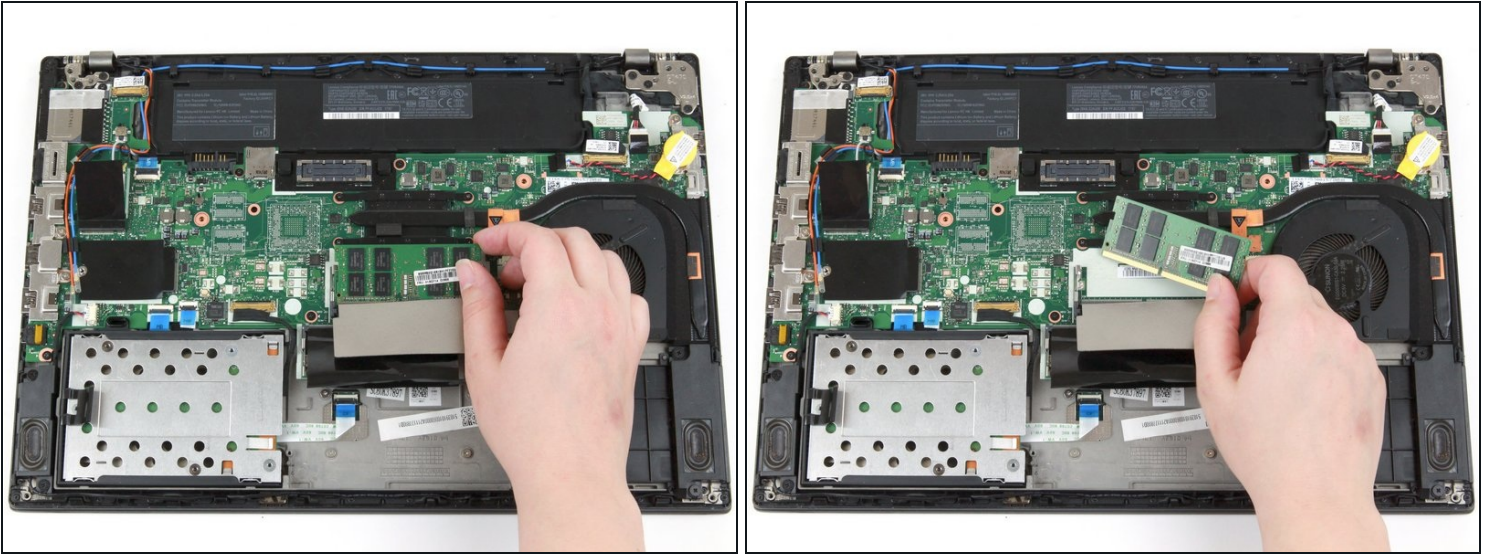
## Step 15



- Use your thumbs to push the metal clips on either end of the RAM outwards.
- ① The RAM will pop up by a few millimeters.

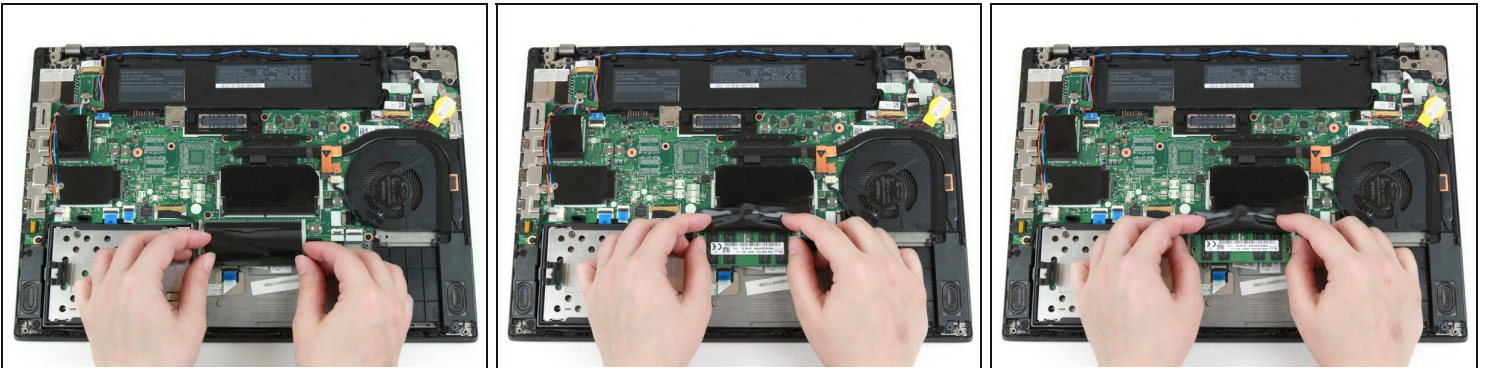


## Step 16



- Use your fingers to lift the RAM out of its socket and away from the laptop to remove it.

## Step 17



- Use your fingers to flip the black flap covering the bottom stick of RAM up.
  - Use your thumbs to push the metal clips on either end of the RAM outwards.
- ❶ The RAM will pop up by a few millimeters.



## Step 18



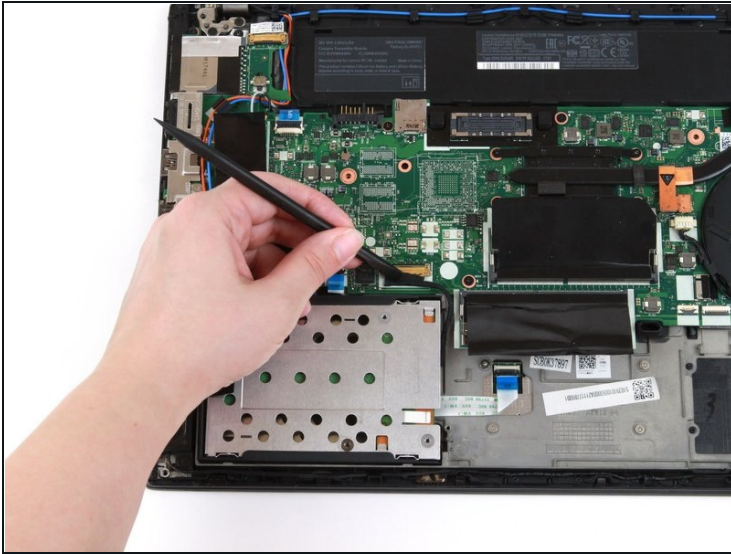
- Use your fingers to lift the RAM out of its socket and away from the laptop to remove it.

## Step 19



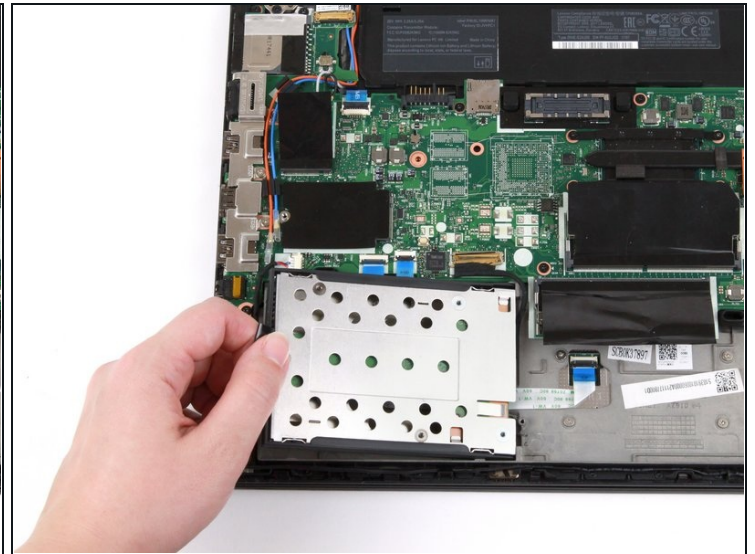
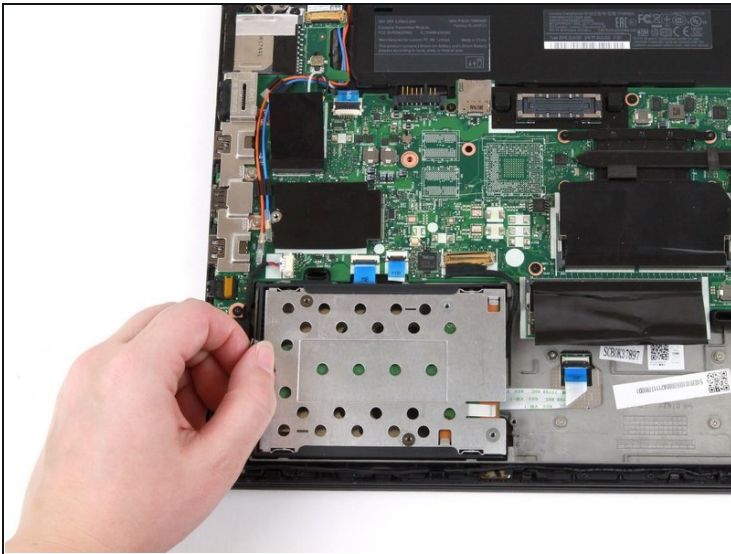
- Use the flat end of a spudger to flip up the metal clip securing the SSD connector to the motherboard.

## Step 20



- Use the flat end of a spudger to separate the connector from its socket.

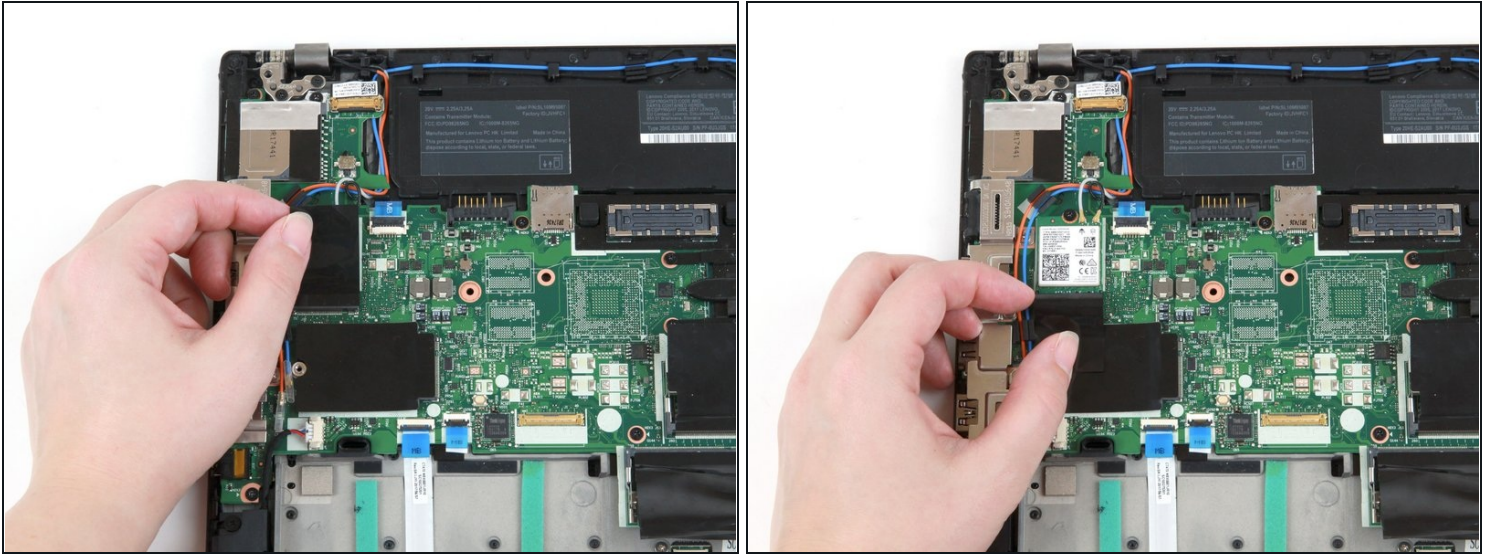
## Step 21



- Grab the tab on the left side of the hard drive, and pull up to remove it from the laptop.

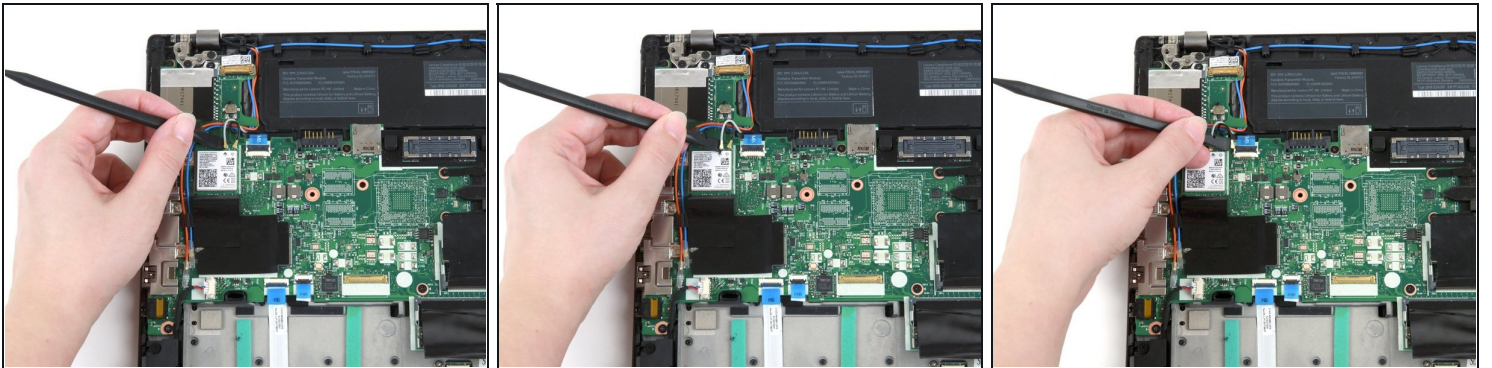


## Step 22



- Use a finger to press the black flap covering the Wi-Fi card down.

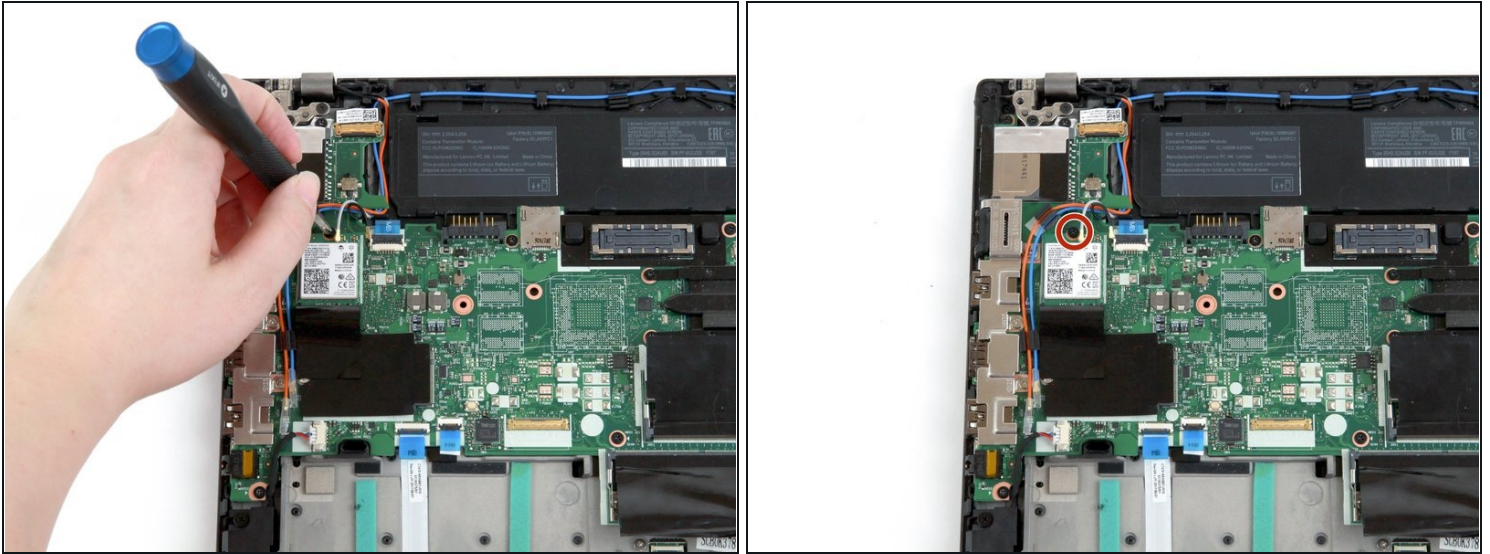
## Step 23



- Use the flat end of a spudger to disconnect the two coaxial wires from the Wi-Fi card.
- ☒ When reassembling, reattach the gray wire on the left and the black wire on the right.

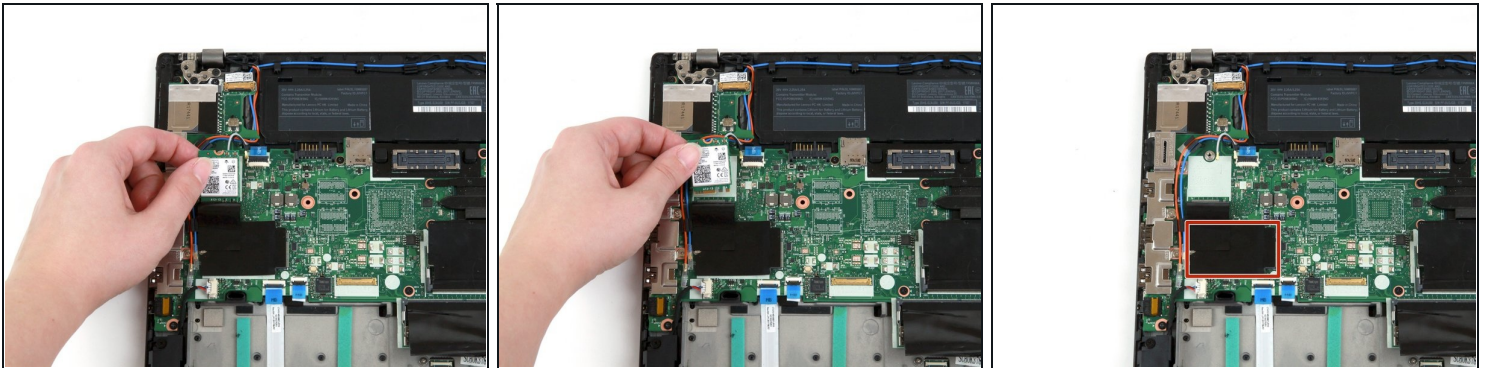


## Step 24



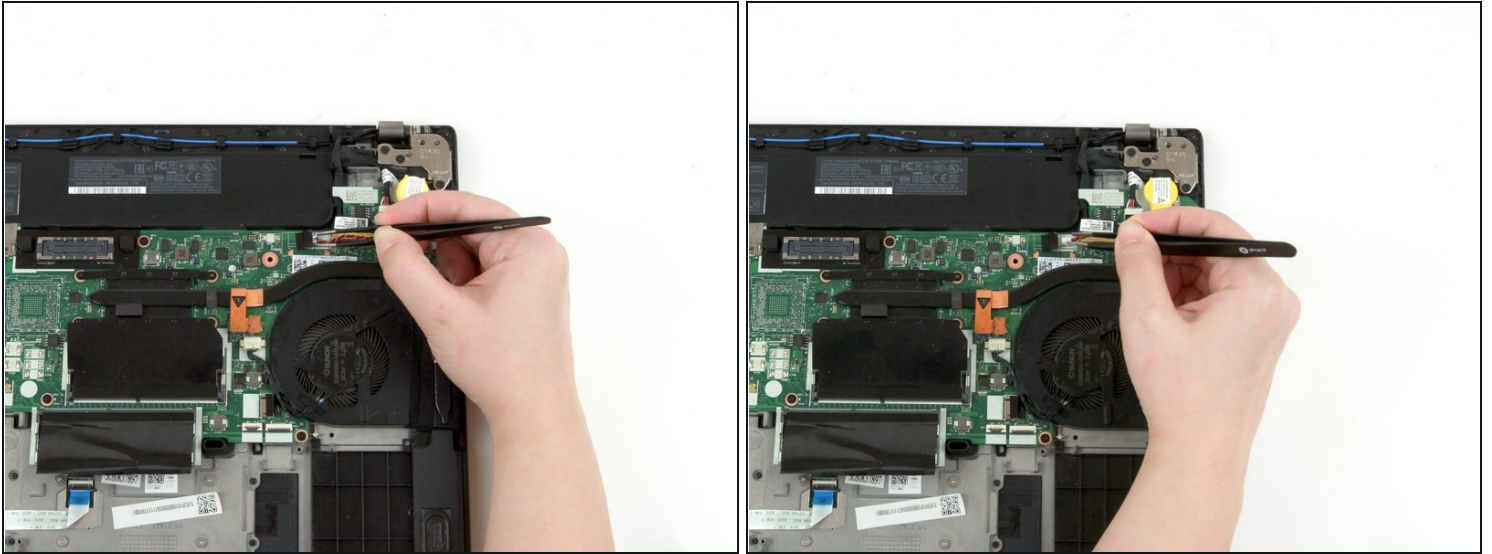
- Use a Phillips #1 screwdriver to remove the single 4 mm screw from the Wi-Fi card.

## Step 25



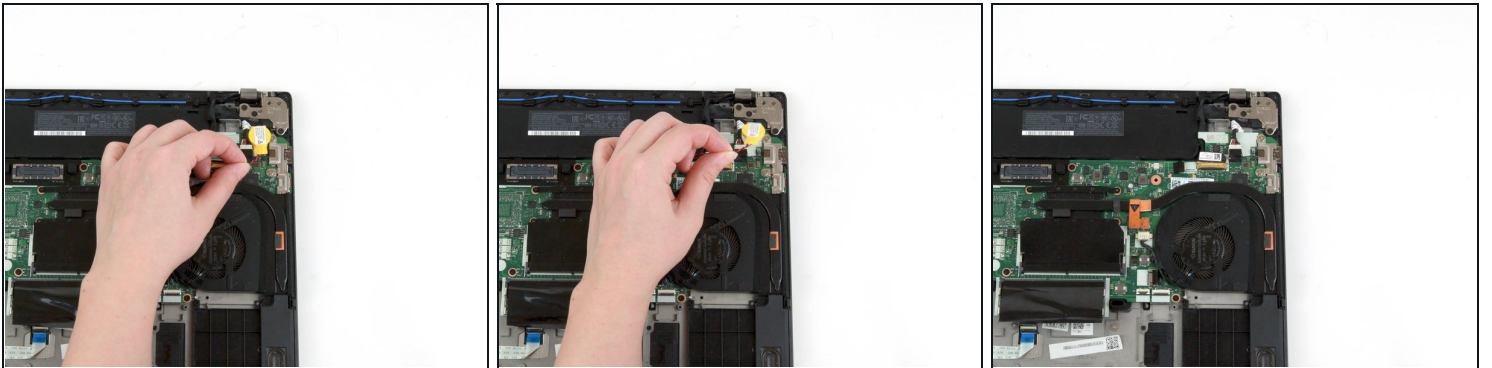
- Use your fingers to lift the Wi-Fi card up and out of its slot.
- This laptop does not include a WWAN card, but if yours does, follow the same procedure as Steps 9-12 to remove it.

## Step 26



- Use a pair of blunt nose tweezers to pull the white connector out of its socket.

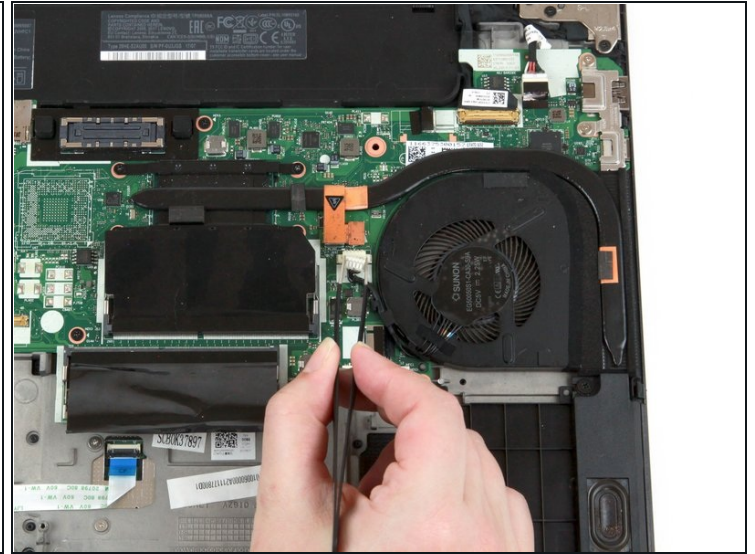
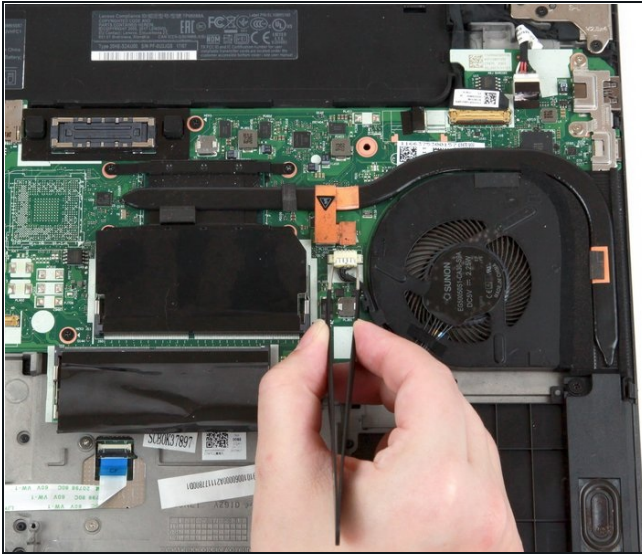
## Step 27



- Grab the wire attached to the coin cell battery, and lift it up and out of the laptop.

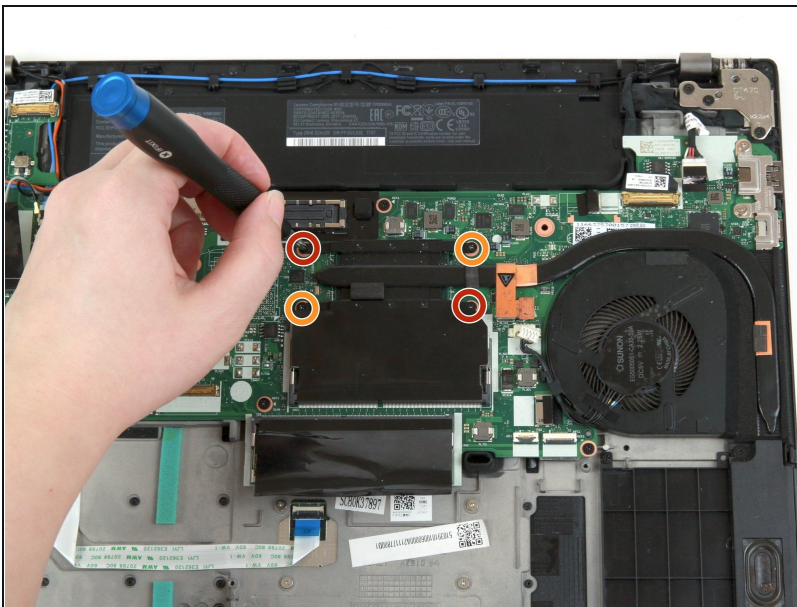


## Step 28



- Use a pair of blunt nose tweezers to pull the white fan connector out of its socket on the motherboard.

## Step 29



- Use a Phillips #1 screwdriver to loosen the first pair of captive screws on the fan and heat sink assembly in a crosswise pattern.
- Use a Phillips #1 screwdriver to loosen the second pair of captive screws on the fan and heat sink assembly in a crosswise pattern.

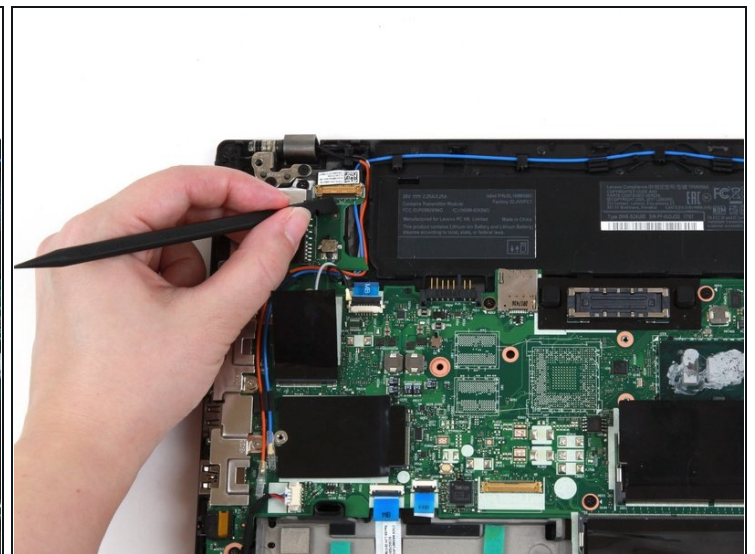
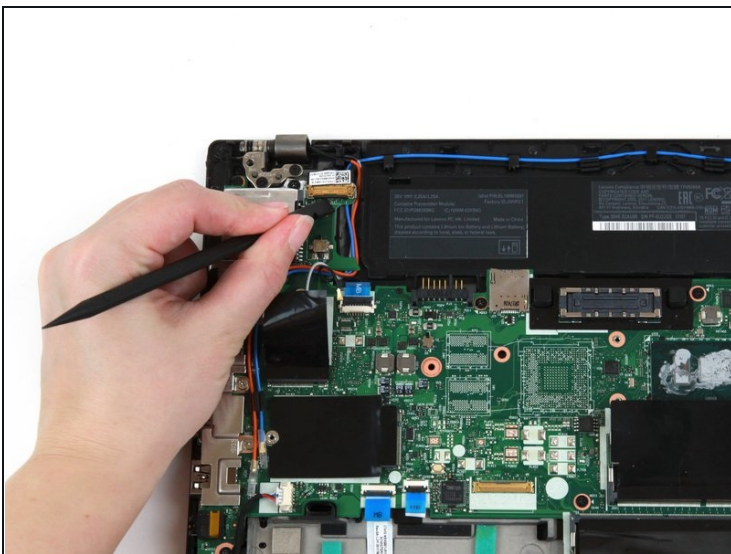


## Step 30



- Use your hand to pull the fan and heat sink assembly up and away from the laptop.
- ☑ Clean the thermal paste from the heatsink and CPU and [reapply fresh paste](#) before reassembling.

## Step 31 — Motherboard



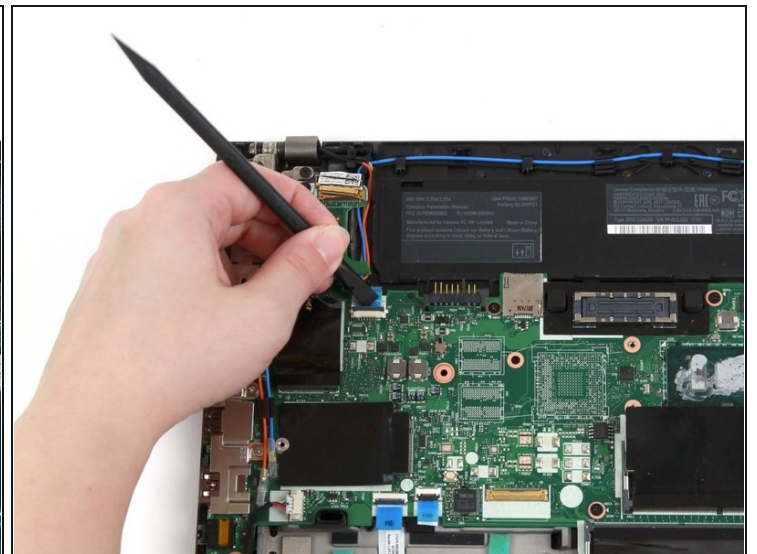
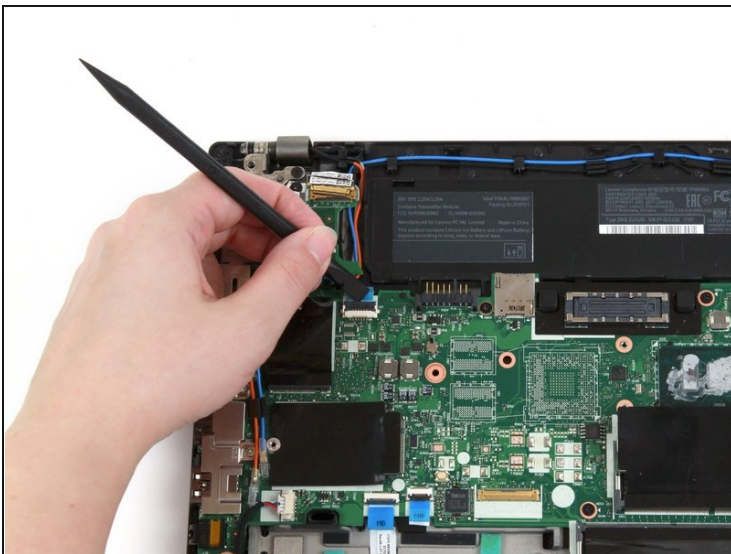
- Use the flat end of a spudger to flip up the metal clip securing the LCD cable to the motherboard.

## Step 32



- Use the flat end of a spudger to disconnect the LCD cable from its socket on the motherboard.

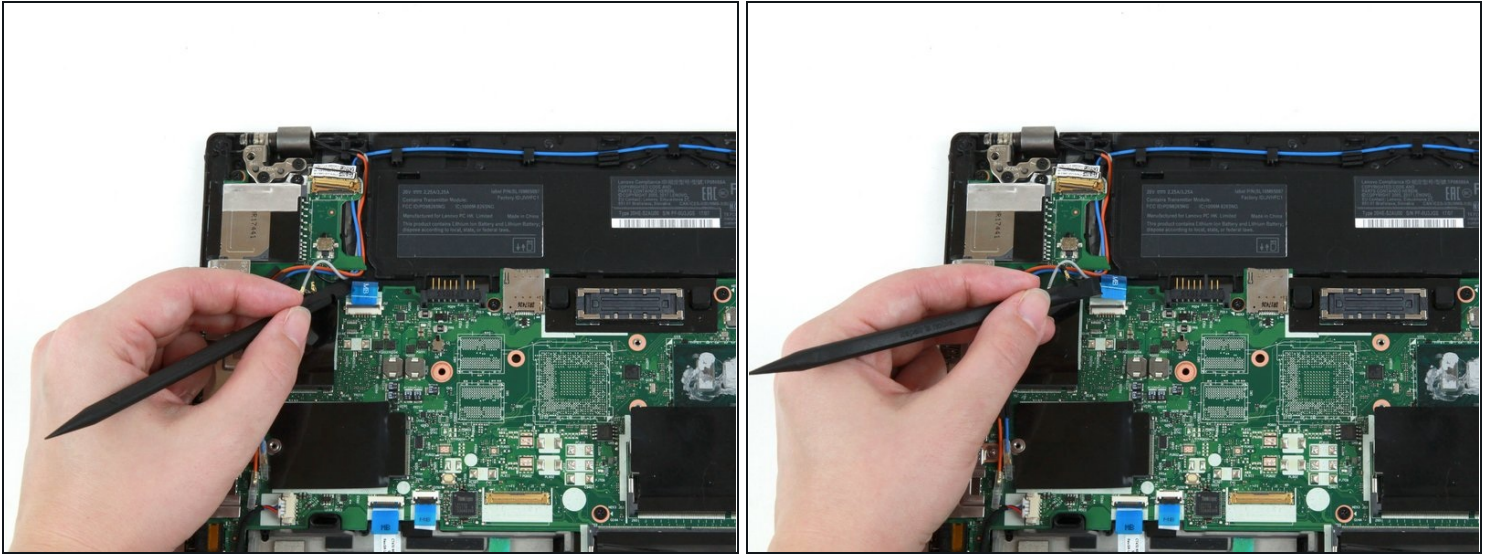
## Step 33



- Use the flat end of a spudger to flip the power button cable's black tab up.

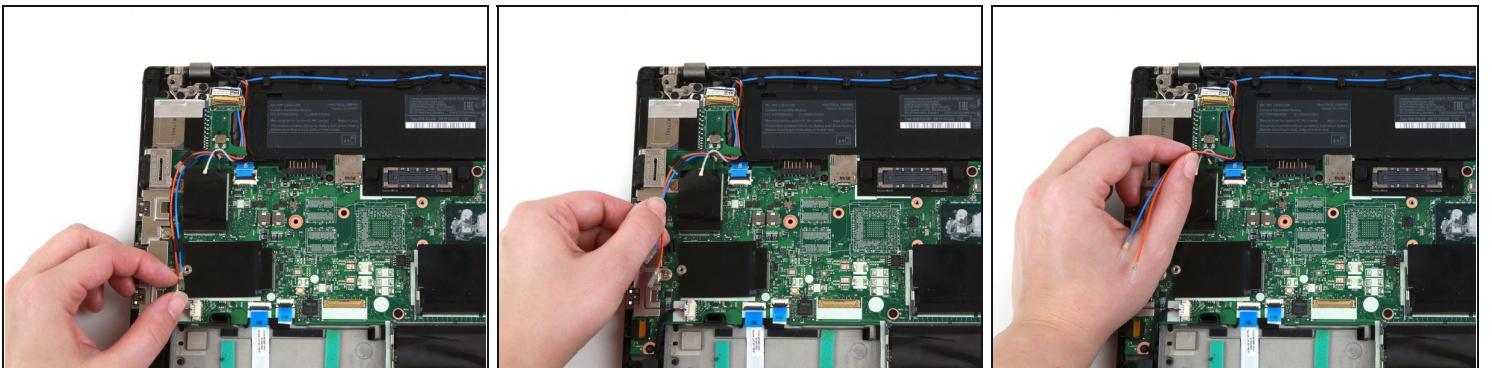


## Step 34



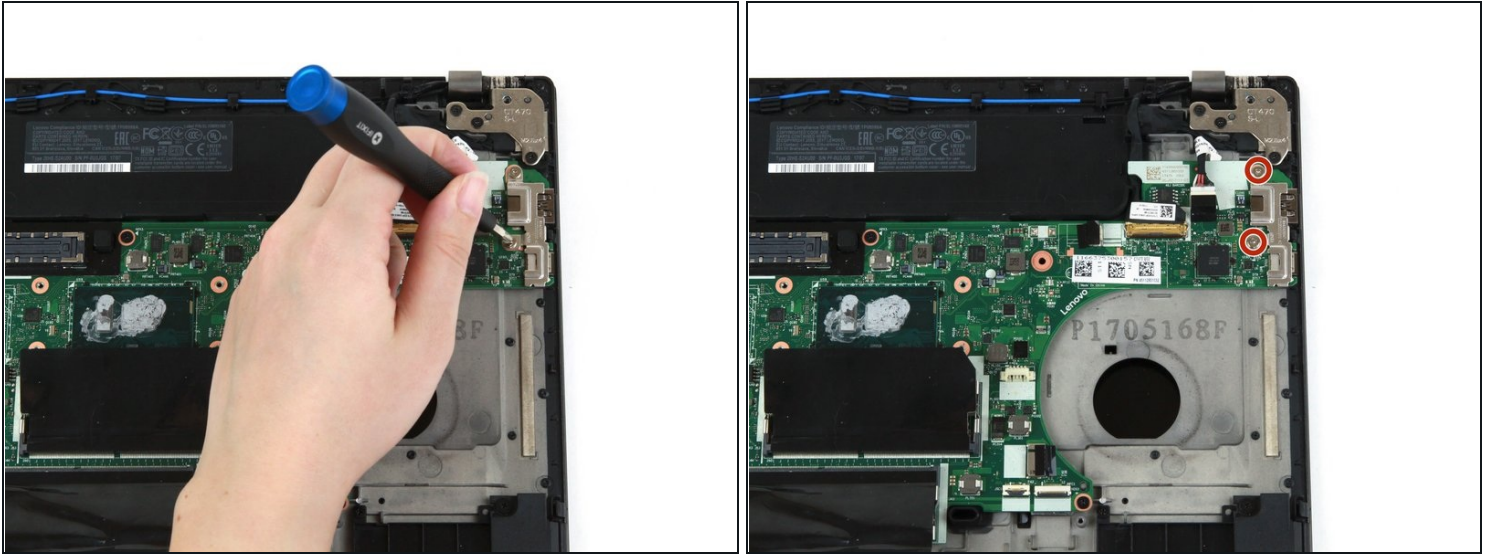
- Use the flat end of a spudger to slide the power button cable out of its connector on the motherboard.

## Step 35



- Use your fingers to detach the red and blue antenna cables from their slots.

## Step 36



- Use a Phillips #1 screwdriver to remove the two 4 mm screws from the USB bracket.

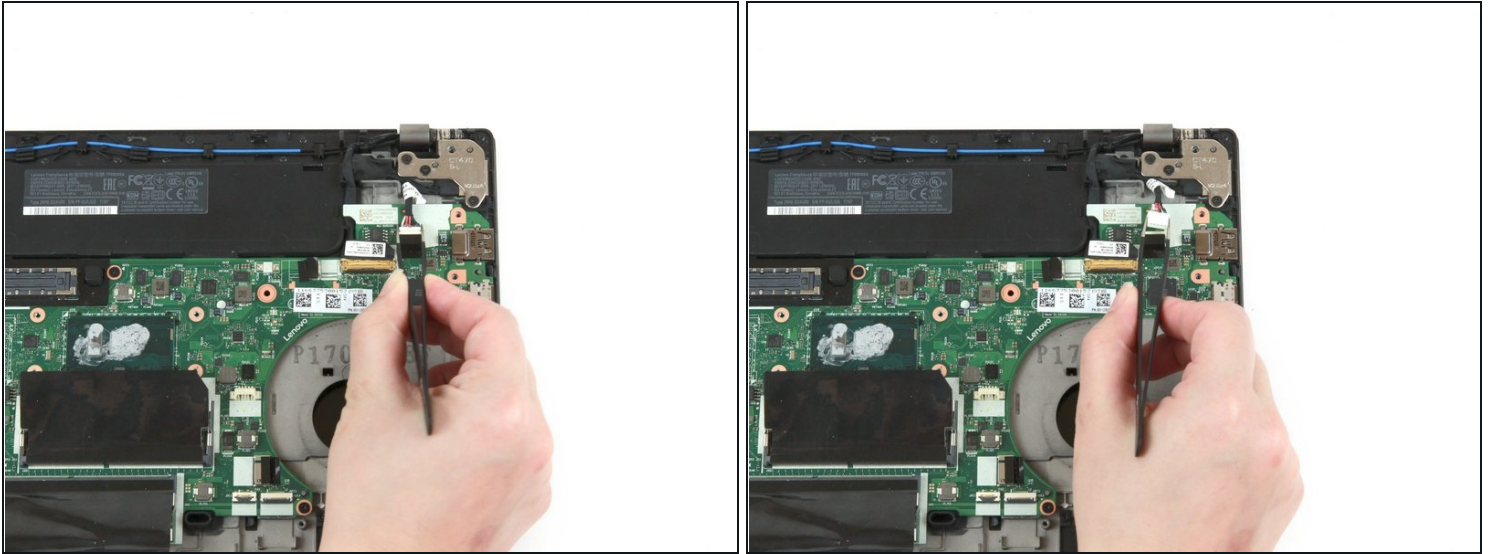
## Step 37



- Use your fingers to lift the USB bracket up and away from the laptop.

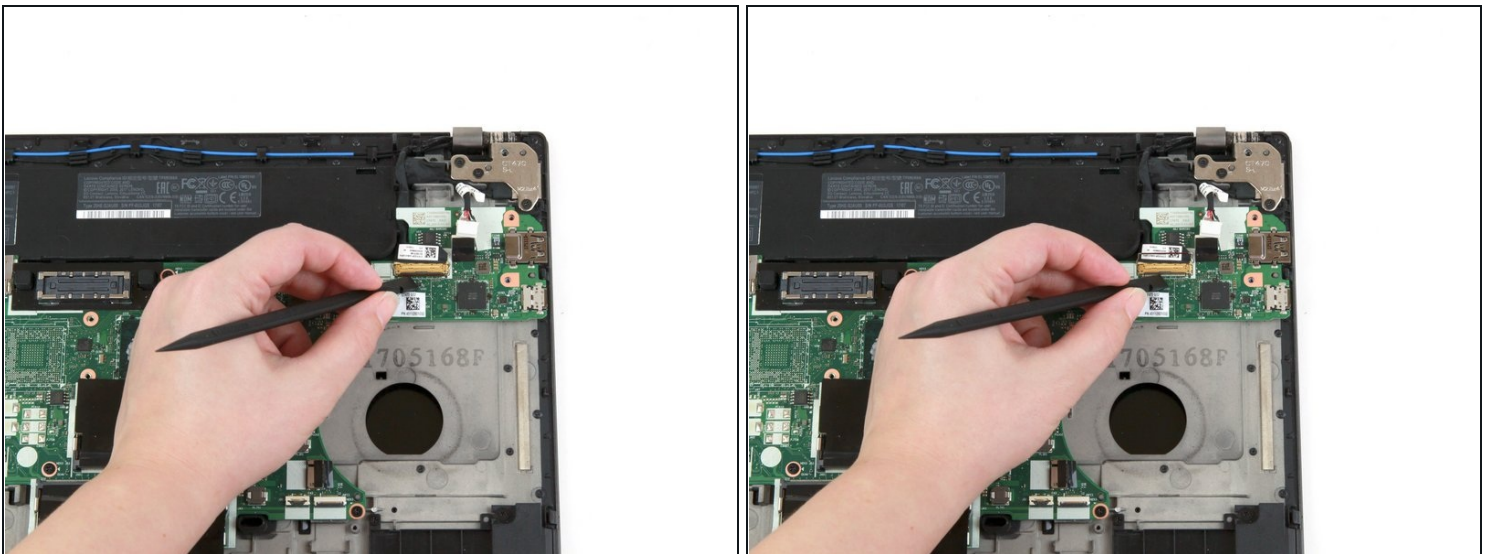


## Step 38



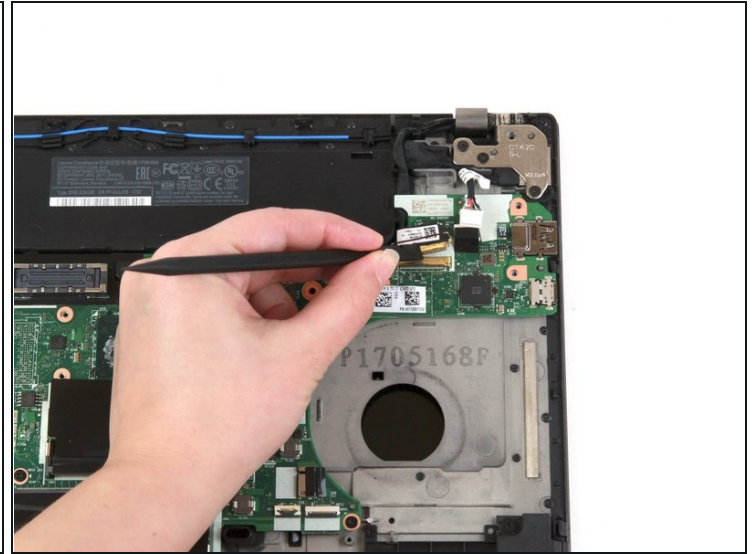
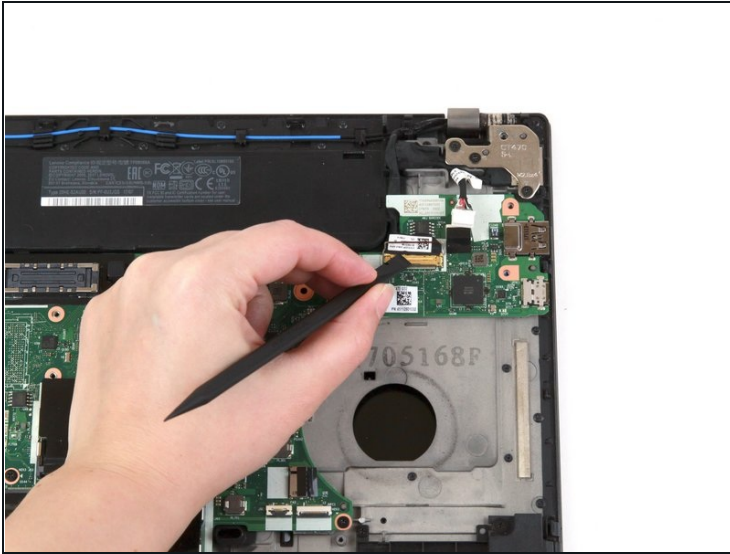
- Use a pair of blunt nose tweezers to disconnect the DC-in cable from its socket on the motherboard.

## Step 39



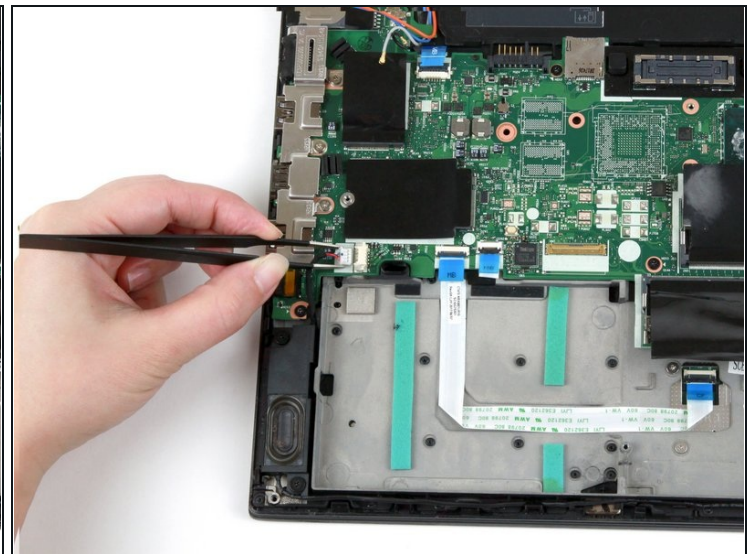
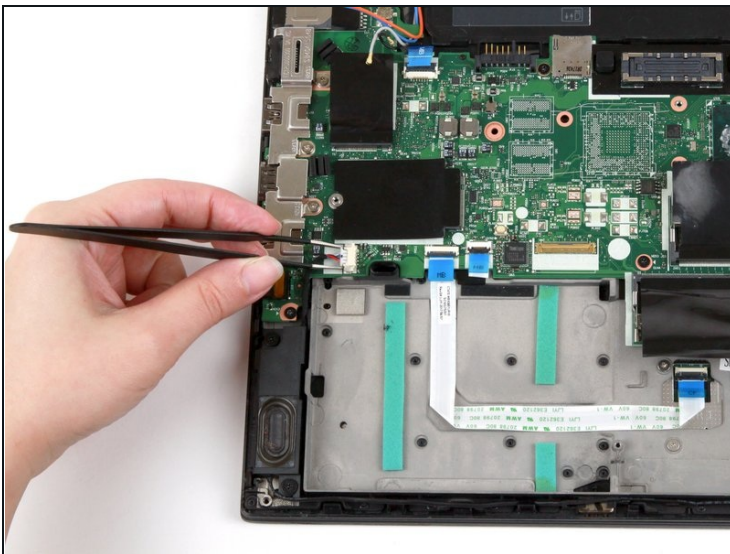
- Use the flat end of a spudger to flip up the metal bracket securing the camera cable to the motherboard.

## Step 40



- Use the flat end of a spudger to disconnect the camera cable from its socket on the motherboard.

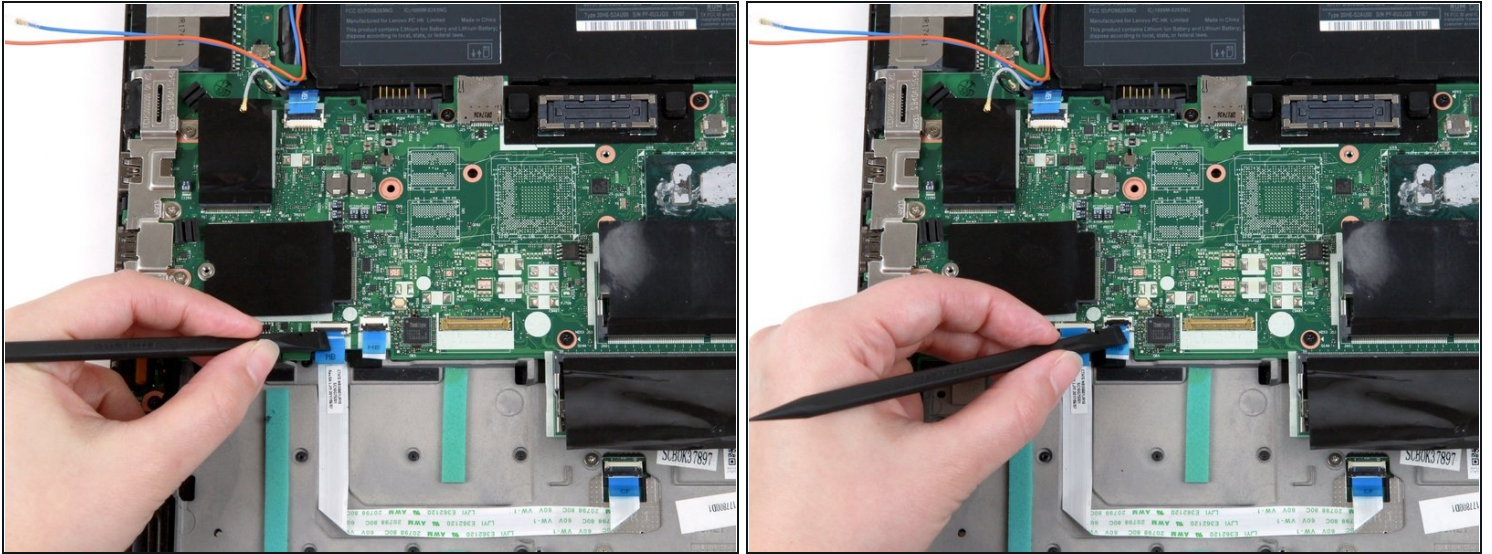
## Step 41



- Use a pair of blunt nose tweezers to disconnect the speaker cable from its socket on the motherboard.

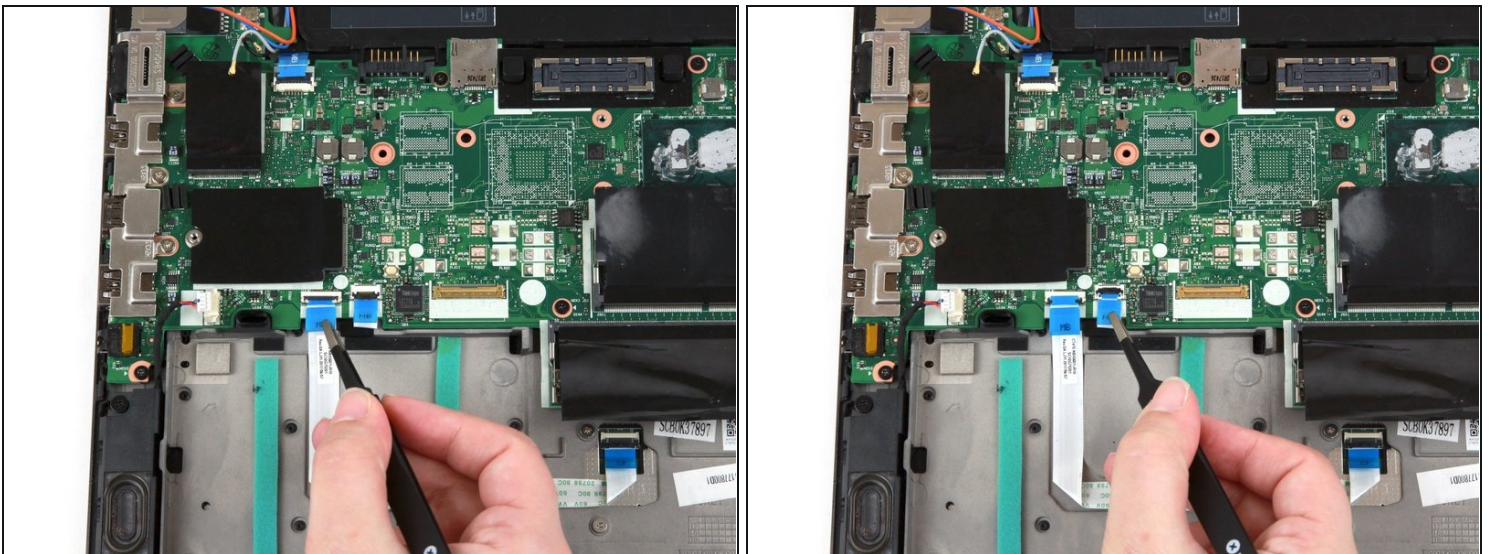


## Step 42



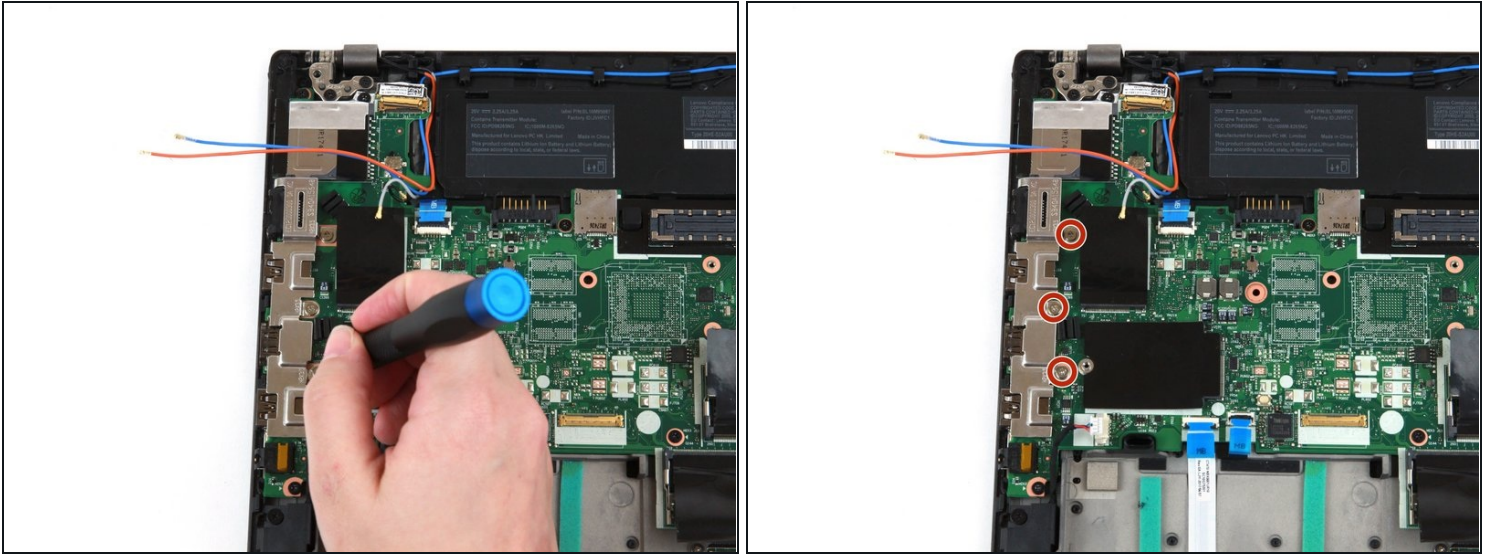
- Use the flat end of a spudger to flip up the black tabs on the trackpad and fingerprint reader cables.

## Step 43



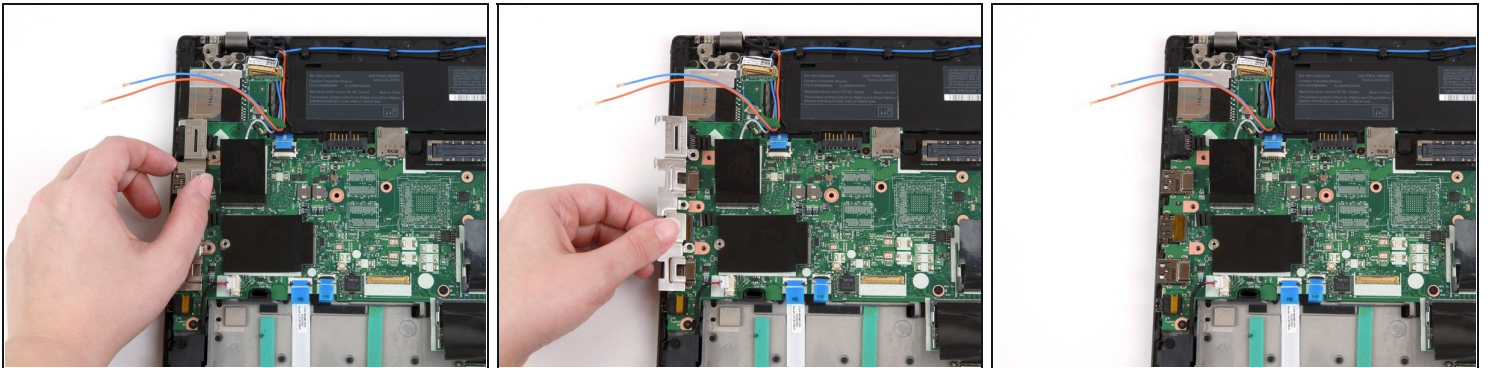
- Use a pair of blunt nose tweezers to slide the trackpad and fingerprint reader cables out of their connectors on the motherboard.

## Step 44



- Use a Phillips #1 screwdriver to remove the three 4 mm screws from the I/O bracket.

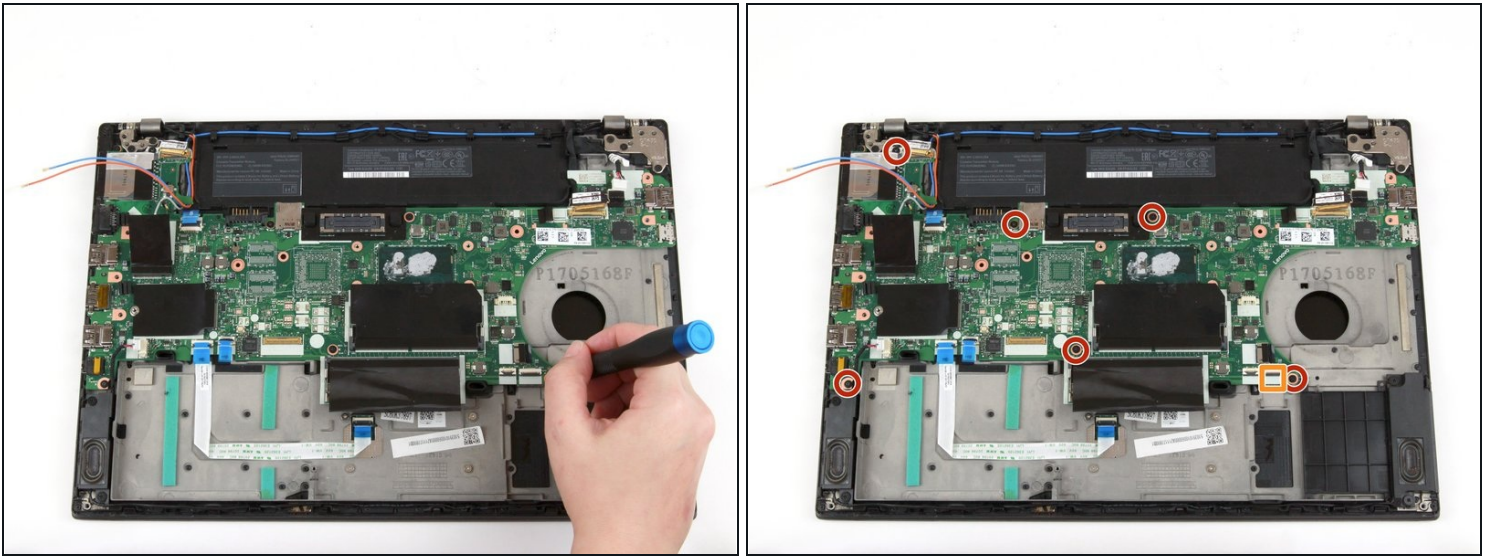
## Step 45



- Use your fingers to slide the I/O bracket to the left.
- Lift the I/O bracket up and away from the laptop.

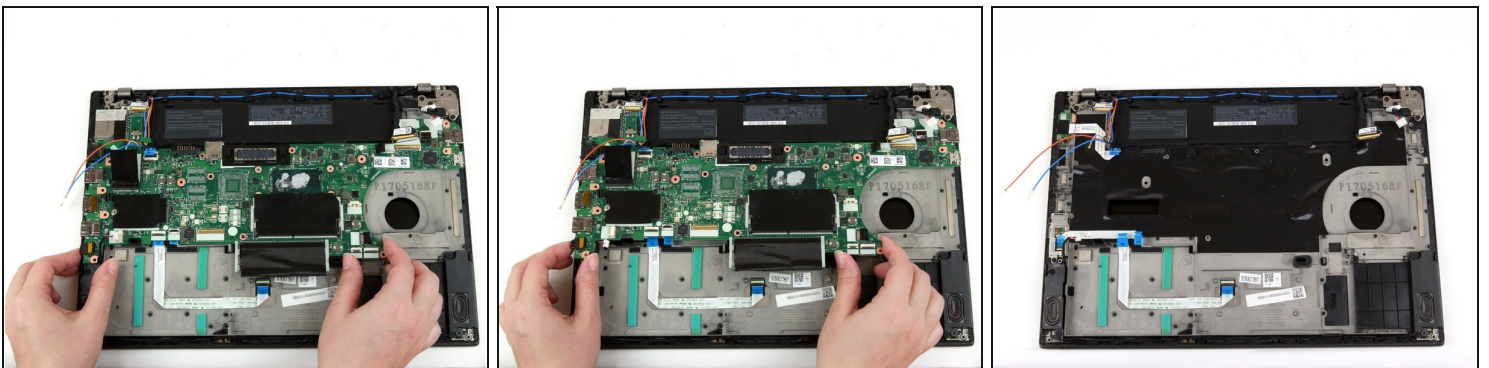


## Step 46



- Use a Phillips #1 screwdriver to remove the six 4 mm screws from the motherboard.
- This laptop does not have an NFC cable, but if yours does, use the flat end of a spudger to flip up the tab and slide the cable out of its connector.

## Step 47



- Use both hands to lift the motherboard up and away from the laptop.

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

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.

