Microsoft Surface Book Power and/or Volume Button Replacement

This guide will enable you to replace the power...

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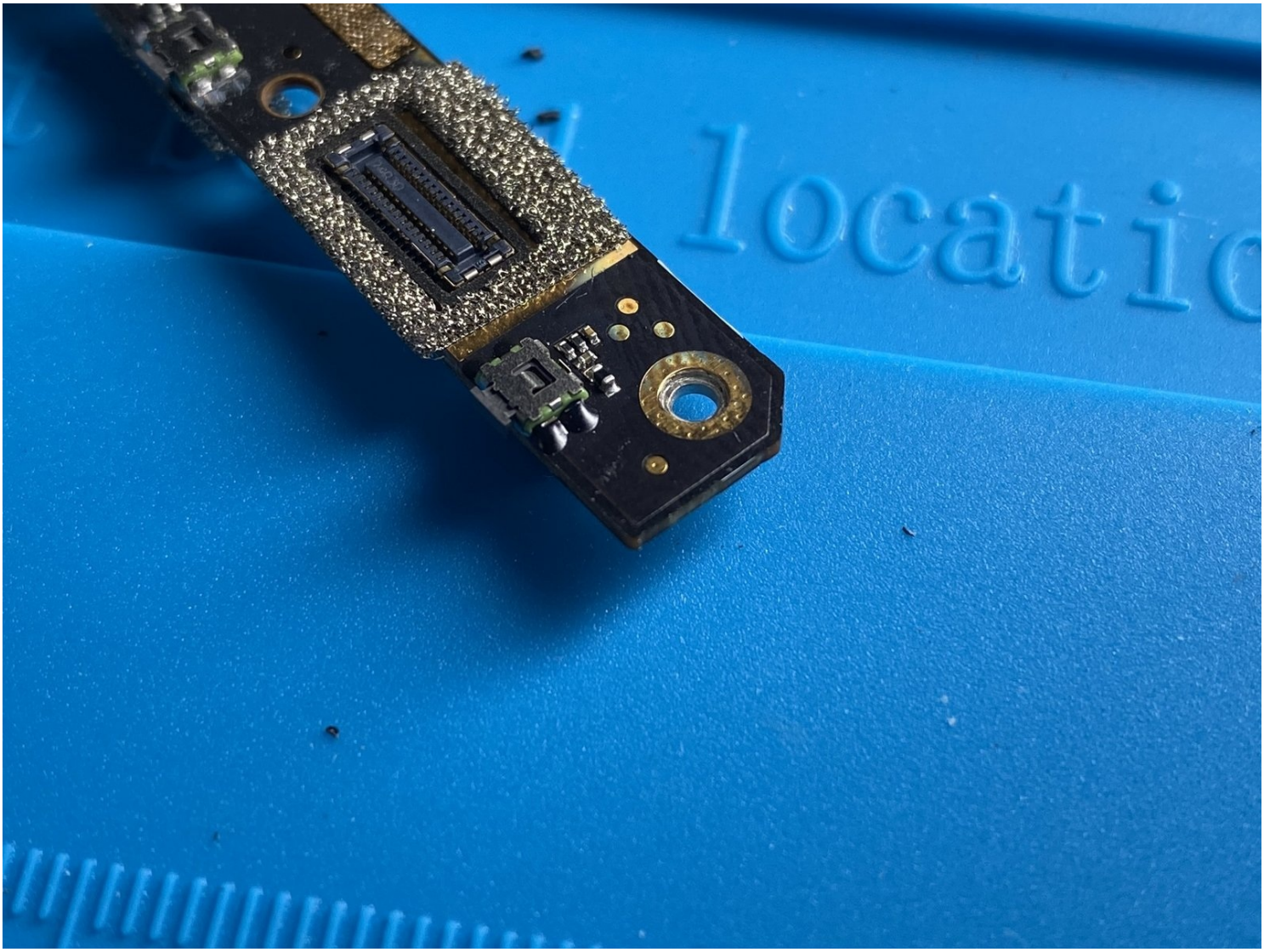


INTRODUCTION

This guide will enable you to replace the power and/or volume button of your Microsoft Surface Book. Follow the **Microsoft Surface Book Screen Replacement** guide to remove the screen from the device.

Tip:

This is a very difficult repair and cost me nearly $450 to complete. This was due to the fact that I had to purchase several parts-only motherboards while I perfected the button harvesting process and a new screen. The repair did bring the Surface Book back to operational state, but not to its original state. You may want to consider going the refurbished option through MS support. Otherwise, I hope my experience benefits you if decide to attempt this repair.

TOOLS:

- Soldering Iron 60w Hakko 503F (1)
- Pro Tech Toolkit (1)

PARTS:

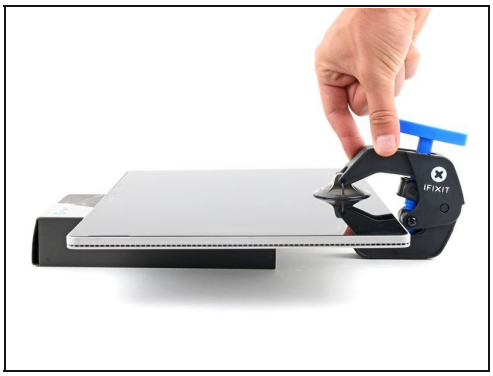
- Lead-Free Solder (1)
- Solder Wick Braid (1)
- Tesa 61395 Double-Sided Tape (1)
- SMD Removal Kit (ChipQuik Alloy 2.5ft, flux, alcohol pads) lead free (1)
- Desoldering Pump (1)
- Microsoft Surface Book 1703 Motherboard (Button Salvage) (1)
- Toothpick (1)
- Epoxy (1)
- Isopropyl Alcohol Wipes (10)

Step 1 — Screen

- Heat an iOpener and lay it on the bottom edge of the screen to soften the glue securing it.

ⓘ You can also use a hair dryer or heat gun, but be careful as extreme heat can damage the screen and/or battery.

Step 2 — Anti-Clamp instructions



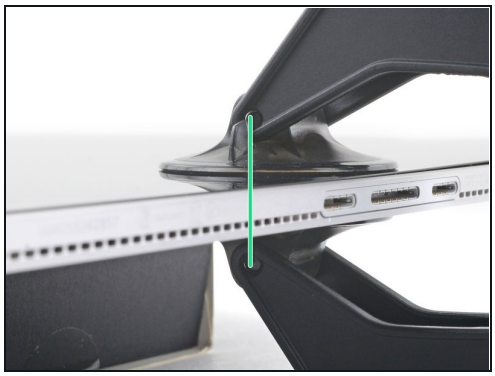
ⓘ The next three steps demonstrate the Anti-Clamp, a tool we designed to make the opening procedure easier. **If you aren't using the Anti-Clamp, skip down three steps for an alternate method.**

ⓘ 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.
- Place an object under your Surface Book so it rests level between the suction cups.
- Position the suction cups near the middle of the bottom edge—one on the front, and one on the back.
- Hold the bottom of the Anti-Clamp steady and firmly press down on the top cup to apply suction.

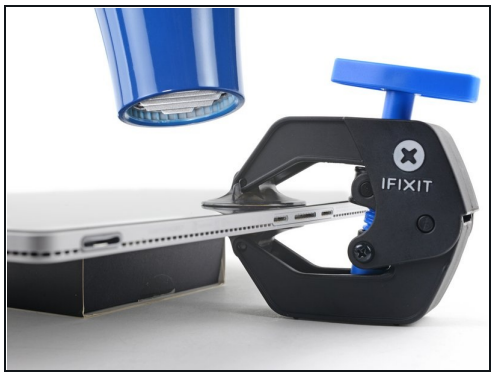
ⓘ If you find that the surface of your device is too slippery for the Anti-Clamp to hold onto, use tape to create a grippier surface.

Step 3



- Pull the blue handle forward 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 4



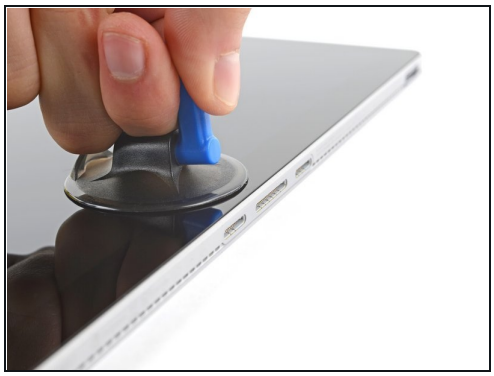
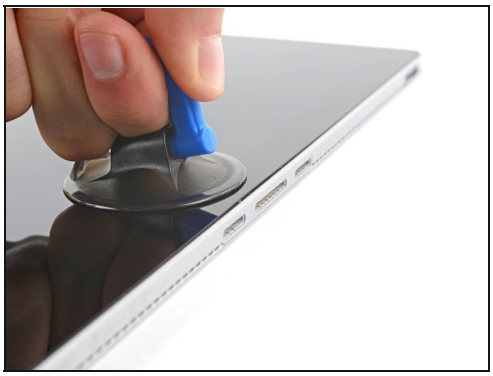

- Wait one minute to give the adhesive a chance to release and present an opening gap.
- If your screen isn't getting hot enough, you can use a hair dryer to heat along the bottom edge.

  ⓘ For complete instructions on how to use a hair dryer, check out this guide.
- Insert an opening pick under the screen 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 clockwise half a turn.

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

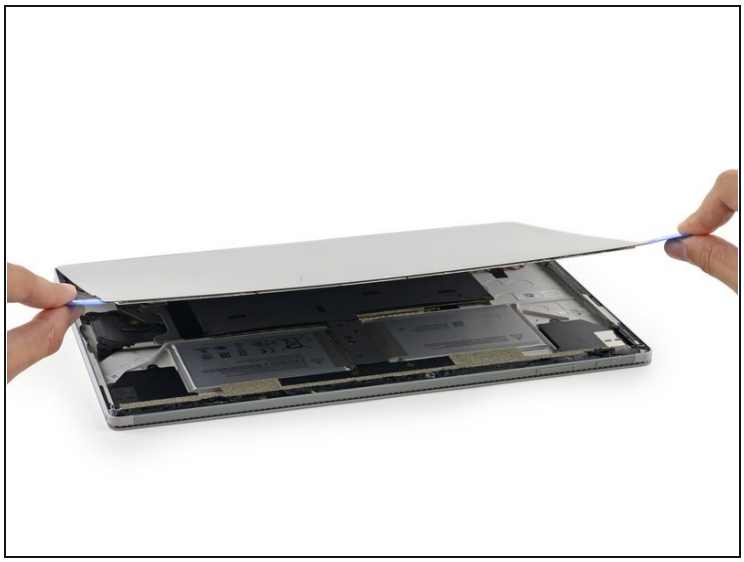
Step 5 — Insert an opening pick


ⓘ The adhesive securing the screen is very strong. This step may take significant force and multiple attempts.

- Apply a suction handle to the screen, as close to the center of the bottom edge as possible.
- Pull up on the suction cup with strong, steady force to create a gap between the screen and the frame.
  ⓘ If you have trouble creating a gap, apply more heat to further soften the adhesive. Follow the iOpener instructions to avoid overheating.
- Insert an opening pick into the gap.

Step 6

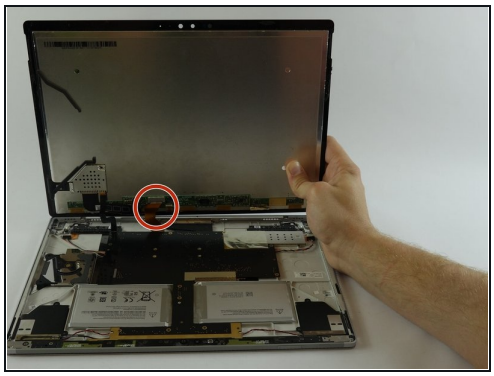


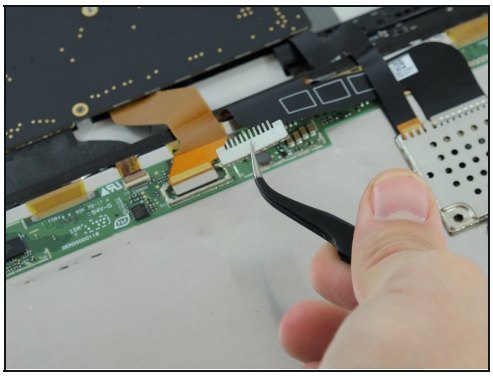
- Use the pick to slice all the way around the perimeter of the screen to separate the glue.

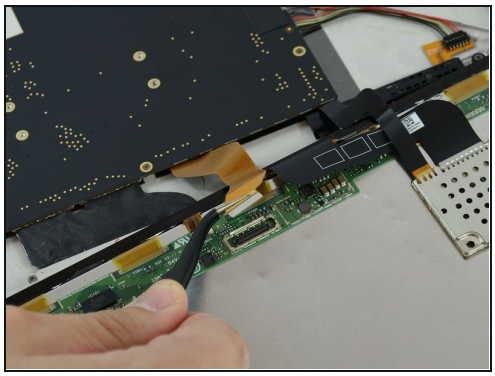
⚠ Do not insert the opening pick too far into the screen or you may cause damage to internal components.

- Gently raise the screen but don't fully detach it until the cables underneath are disconnected.

Step 7

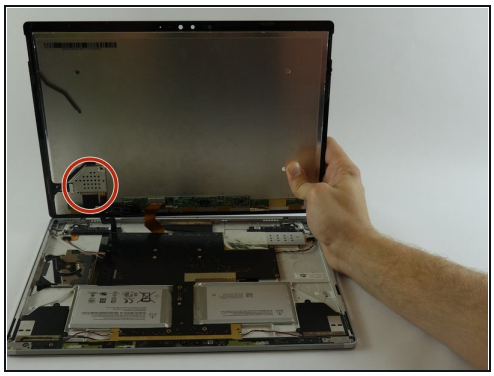
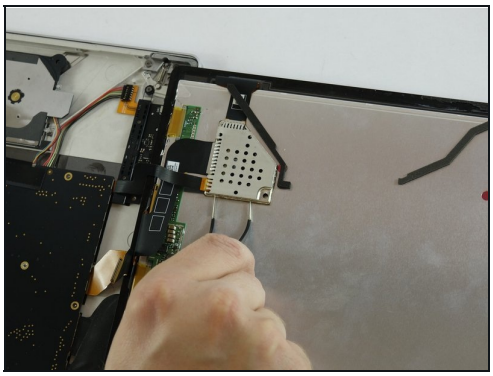
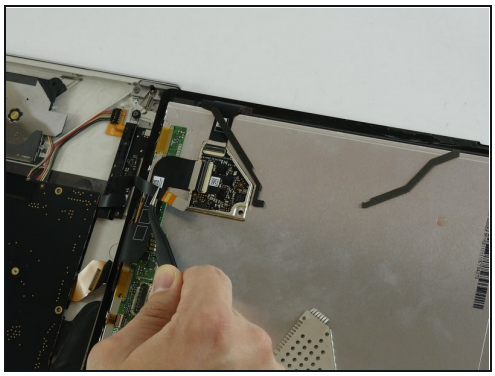






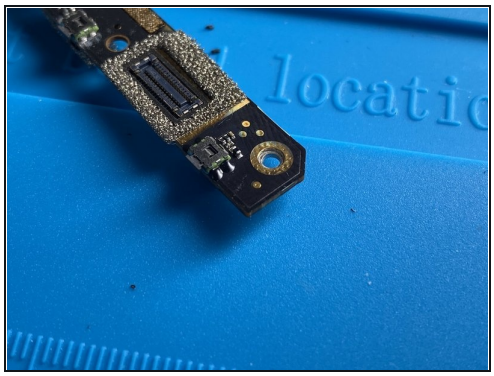
- Begin by removing the ribbon on the right. With the curved tweezers, carefully remove the metal bracket to expose the end of the ribbon. Remove ribbon.

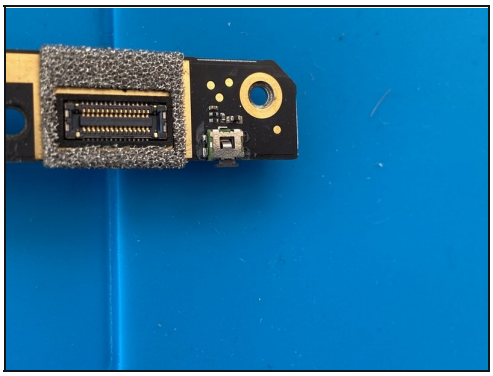
Step 8

- Next, remove the metal shield covering the other ribbon. Then remove the ribbon.
- Remove the screen.

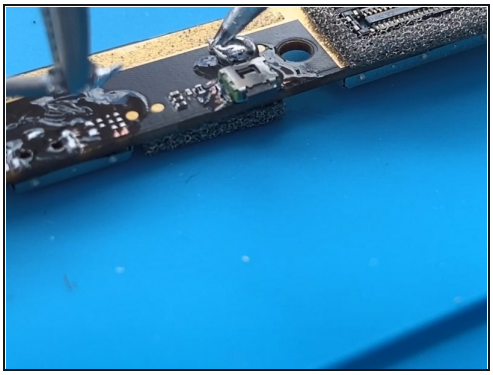
Step 9 — Remove Epoxy From SMT Button





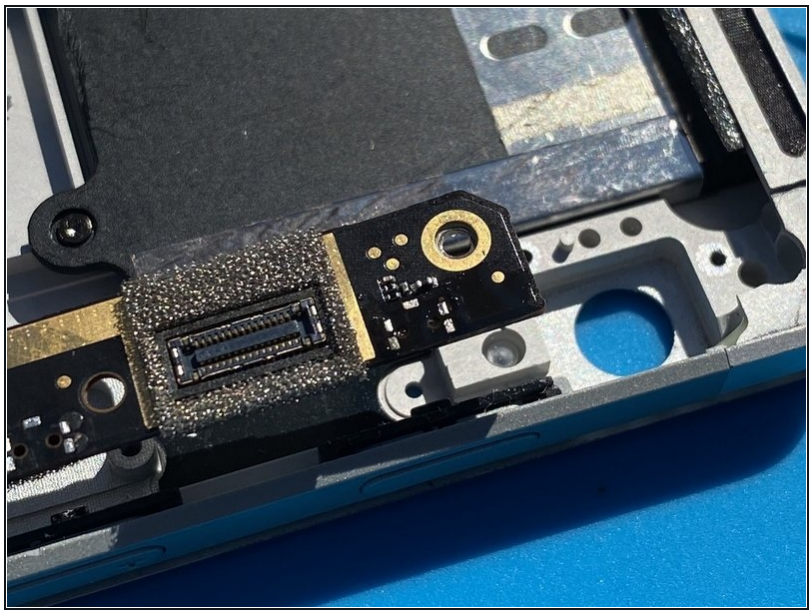
- Gently remove the black epoxy resin covering surface contacts on the button from your parts only Microsoft Surface Book 1703 Motherboard using an X-ACTO knife.
- Place the X-ACTO knife blade flat against the board and apply gentle pressure to the epoxy moving the knife with control towards the button. The epoxy should pop off the mount and the side of the button.
- Once you removed the epoxy with the X-ACTO knife the button appear similar to the second image.
- **Warning:** the buttons are delicate and be damaged if you apply too much pressure as you attempt to remove the epoxy.
- **Warning:** if you dig in to much you can snap the button clear of the board breaking the surface mount contacts on the board. If you do the motherboard in the computer you'll be unable to repair the issue and will need to install a new motherboard. Trust me, just don't.
- **Warning:** there are tiny surface mount components next to the buttons on the board. Be very careful not to hit them or disturb them with the X-ACTO knife as you remove the epoxy.
- **Tip:** Work steps 1 - 3 on your parts only Motherboard first to get the feel of each step before attempting the procedure on the Motherboard in your computer. I would recommend you remove all three buttons from your parts only board for practice. I damaged several buttons and circuit boards before achieving success.

Step 10 — Desolder SMT Button



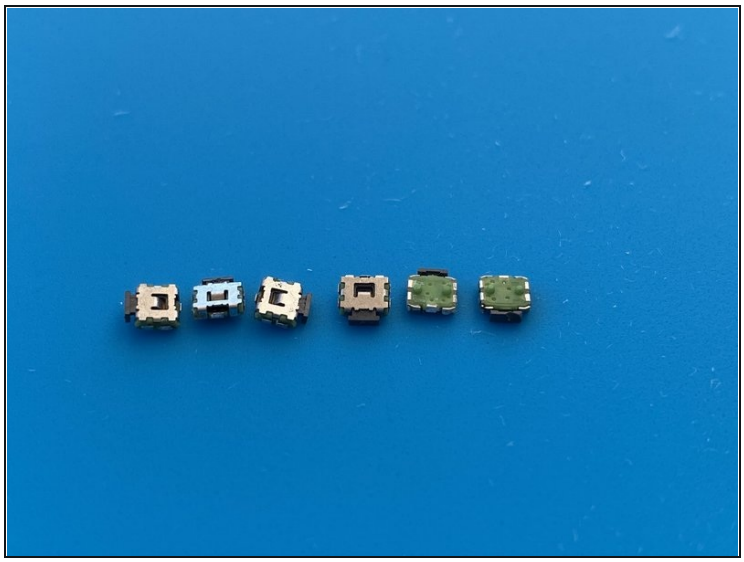
- Apply a little **flux** to the five leads that mount to the circuit board. There are two on either side of the button and one on the back of the button. *See the reference image.*
- Apply the **Lead-Free Chip Quik Alloy** to the button contacts using a **soldering iron**.
- While the Chip Quik alloy is still in a liquid and malleable state and with carefully applied heat from the soldering iron gently slide with minimal pressure the X-ACTO knife between button and the circuit board right beneath the push button head and carefully attempt to rotate the knife blade so that it lifts the button from circuit board.
- **Warning:** If the button doesn't slip off the board apply more heat and try to remove the button.
- **Warning:** there are two tiny anchors the help seat the button on the circuit. You can damage these if you are not careful so don't slide your knife in the middle of the button. Slide it between the board on either side of the button. *See the reference image.*
- **Warning:** there are very tiny surface mount components right next to the button. DO NOT disturb them with soldering iron. Make sure you apply heat only to the surface mount contacts on the button. DO NOT all the Chip Quik Alloy to come in contact with the other surface mount components on the board.

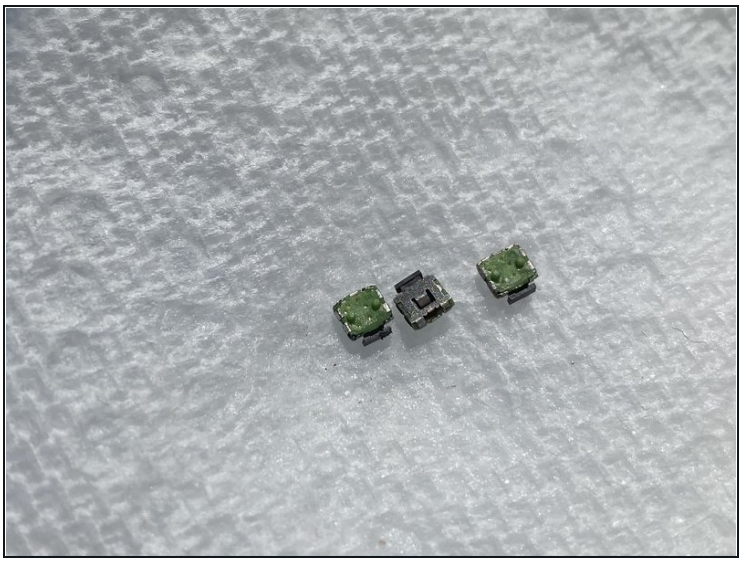
Step 11 — Clean Surface Mounts on the Circuit Board



- Using Solder Wick gently clean the five surface mount contacts so they are free of solder.
- Remove any remaining flux using an alcohol pad or flux remover.
- **Warning:** there are tiny surface mount components next to the button. Be **extremely** careful when cleaning the board to avoid damaging them.

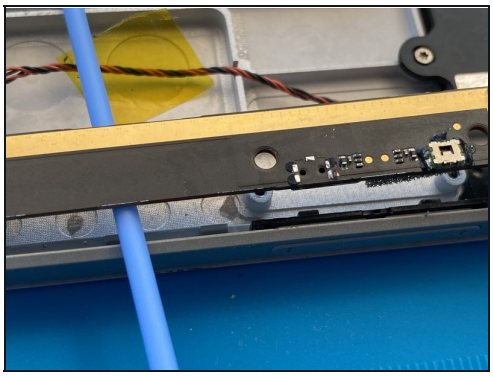
Step 12 — Clean SMT Buttons





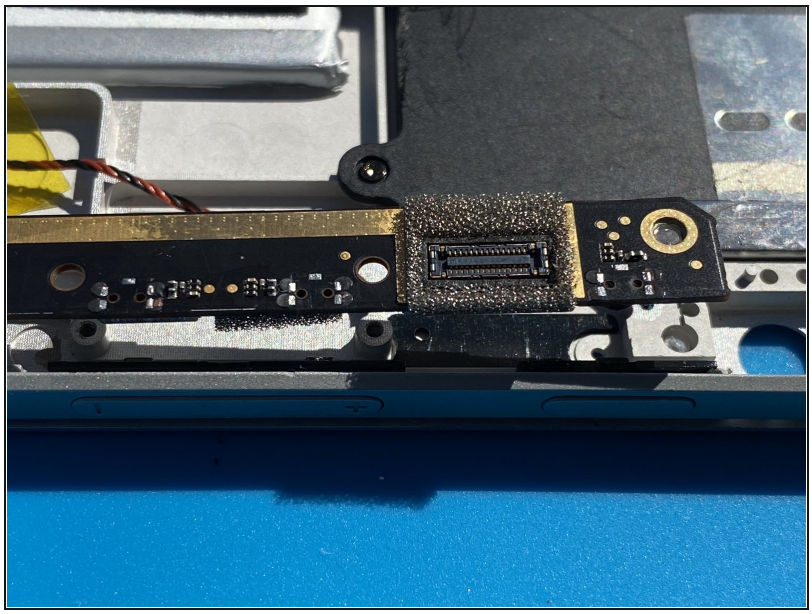
- You need clean any residual solder and flux from buttons you harvested from your parts only board. Use solder wick to clean all the J leads on the button.
- **Warning:** you can damage the casing and leads on the button if you remove it incorrectly or apply to much heat.
- **Tip:** tip check the operation of the button to be sure it wasn't damaged in the removal process.
- **Tip:** make sure you clean any excess flux from the button.

Step 13 — Prepare Motherboard

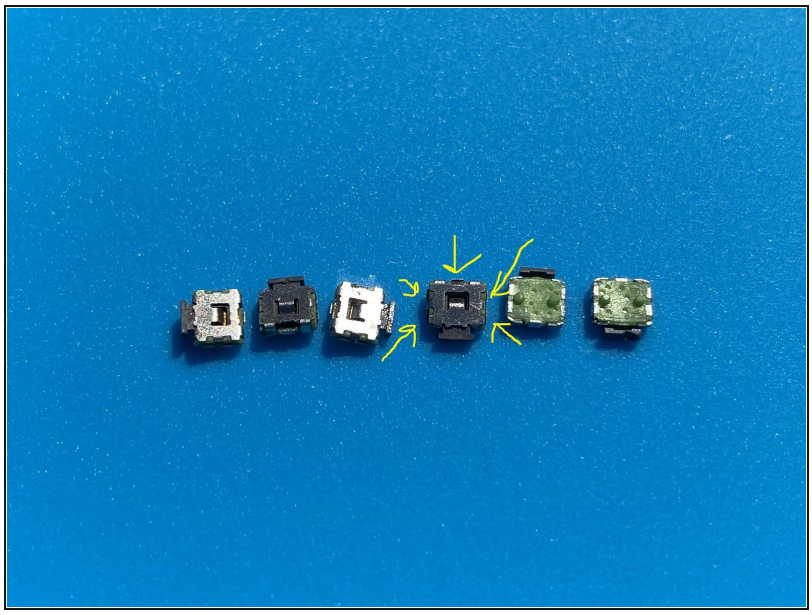

- Once you've got the hang of the procedure on your parts only motherboard you are ready to attempt the procedure on your computer.
- You do not need to and you SHOULD NOT remove the motherboard to repair the button. Simply remove the screws on the motherboard that hold the upper portion of the board to the chassis.
- Gently slide a Q-tip between the motherboard and chassis.

Step 14 — Repeat Steps 5 through 7 on the Device



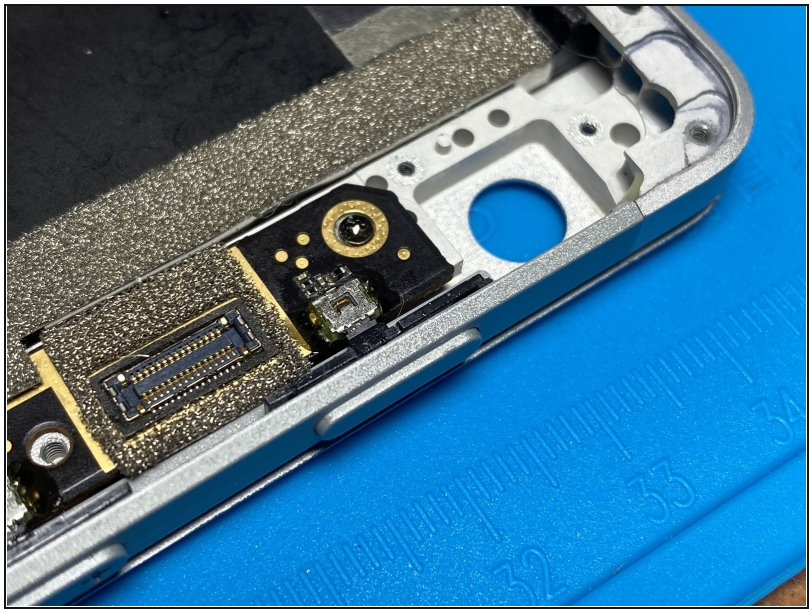
- Repeat steps 5 - 7 on the motherboard in your computer. Make sure you clean the Surface mounts.

Step 15 — Prep SMT Button



- I found the best technique to for mounting the button back to the board was to apply solder to each of the J Leads on the button before soldering.
- Using a fine tweezers hold the button and apply a small amount of solder to each lead.

Step 16 — Mount SMT Button to Motherboard



- Apply a small amount of flux to the surface mount pads on the board.
- **Recommended:** for additional strength you may want to consider gluing the button in place. I did this on my fix.
- Secure the button in place on the motherboard making sure it is flush with the circuit board and touching the surface mount contacts. One-by-one heat each of the J Leads on button using your soldering iron. If you've done this right the flux should draw the solder to the SMT pads on the board.

- Testing: to test your soldering job you can carefully screw the motherboard back in place so that the battery contacts are touching the motherboard. Gently press the button being careful not to break it. If your soldering was done correctly you should hear the fan turn on when you power it up.

- Using a toothpick apply a drop of epoxy for each of the J leads on the button to circuit board so that the drop covers the lead. Allow the epoxy to cure based on the product instructions. The epoxy helps keep the button in place so that when you press down it doesn't break free from the board.

- **Note:** The button harvesting process may cause some flux to get into the button and it may not click when you press it. This happened to me. I was unable to find a way to clean the button without damaging it. Unfortunately you may find the button requires additional pressure in order to power on and off your device.

To reattach the screen to your device, follow the instructions in the **Microsoft Surface Book Screen Replacement** guide**.**