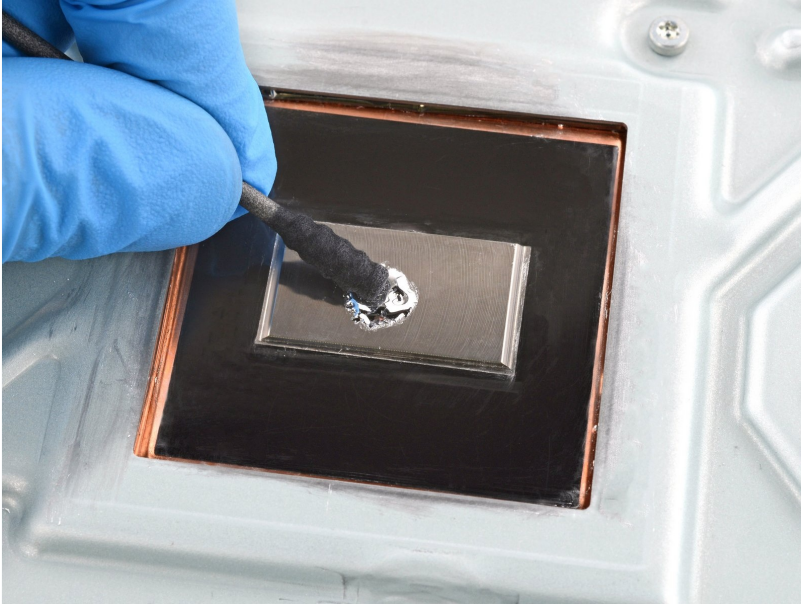




How to Apply Liquid Metal in a PlayStation 5 Slim

Use this guide to apply liquid metal in your...

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INTRODUCTION

Use this guide to apply liquid metal in your PlayStation 5 Slim. You can also use this guide to re-spread existing liquid metal.

Your PS5 Slim has an [Accelerated Processing Unit](#) (APU), which uses [liquid metal](#) TIM (thermal interface material) instead of traditional thermal paste to transfer heat. Over time, the liquid metal can oxidize or become unevenly spread on the APU and heatsink, especially if the PS5 Slim stood upright for long periods of time. If the liquid metal has oxidized, it'll look dried-out or cracked and will need to be cleaned and replaced. If it's just unevenly covered, you can re-spread it evenly across the surfaces of the APU and heatsink.

Your liquid metal might need to be replaced if your PS5 Slim is overheating, throttling, or having overall poor performance. These signs could also mean a faulty or dirty fan. To remove your fan for cleaning, follow [this guide](#).

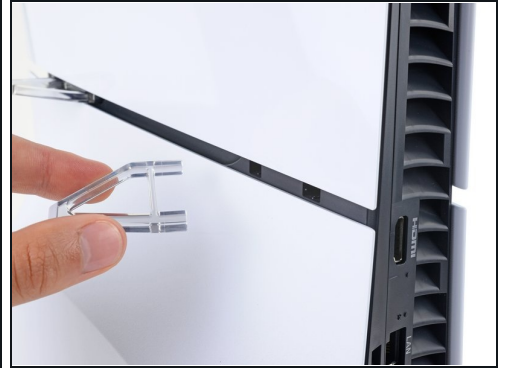
TOOLS:

- [PlayStation Toolkit](#) (1)
- [Phillips #0 Screwdriver](#) (1)
- [T8 Torx Security Bit Screwdriver](#) (1)
- [Tweezers](#) (1)
- [ESD Safe Blunt Nose Tweezers](#) (1)
- [Spudger](#) (1)
- [Nitrile Gloves](#) (1)
- [Cotton Swabs](#) (1)
- [Isopropyl Alcohol](#) (1)
- [Microfiber Cleaning Cloths](#) (1)
- [Compressed Air](#) (1)
- [iOpener](#) (1)
- [Hair Dryer](#) (1)

PARTS:

- [Thermal Grizzly Conductonaut Liquid Metal](#) (1)
- [Thermal Pad](#) (1)
- [Precut Double-Sided Adhesive Card](#) (1)

Step 1 — Prepare your PlayStation for disassembly



Before starting your repair:

- Shut down your console and unplug all cables and accessories.
- Remove any stands supporting your device and lay it down.

Step 2 — Remove the console covers



 Each console cover is secured with hooks along the rear edge and clips along the front edge.

- To remove a cover, firmly pull up the front edge to release the clips.
 -  You'll hear distinct "pops" as the clips release.
- Remove the cover.

Step 3



- Use the same process to remove the three remaining covers.

☑ To reinstall a cover, place the [hooks into their cutouts](#) along the rear edge and firmly press the front edge of the cover into place to re-engage [the clips](#).

Step 4 — Remove the disc drive



ⓘ If your PlayStation doesn't have a disc drive, skip this step.

- Use the cutout on the bottom right corner of the disc drive to lift its right edge and disconnect it.
- Remove the disc drive.

☑ During reassembly, place the hooks on the left edge of the drive into their cutouts and firmly press the drive into place so the connector on the bottom right corner goes into its [socket](#).

Step 5 — Remove the expansion slot cover screws



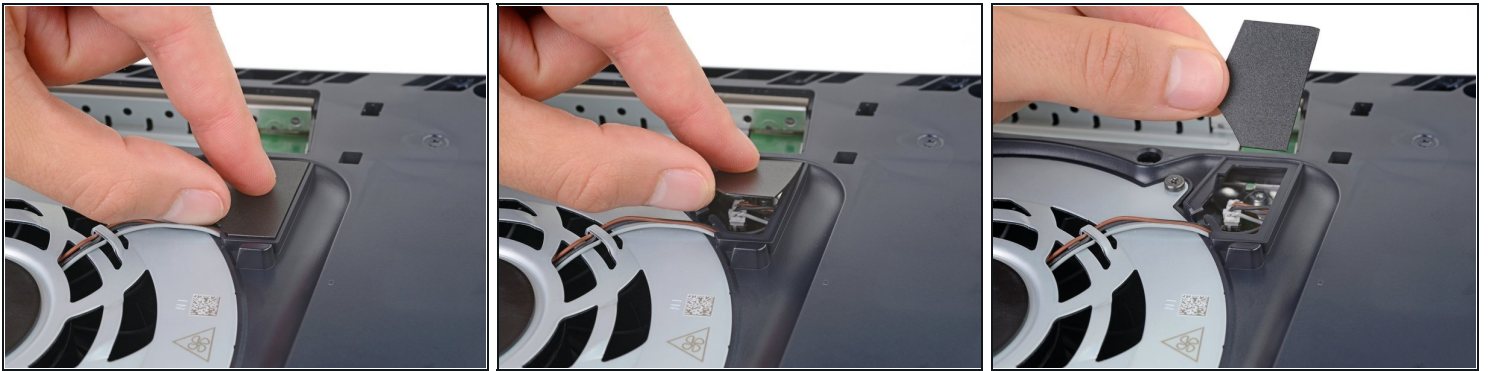
- ⓘ Throughout this repair, [keep track of each screw](#) and make sure it goes back exactly where it came from.
- Use a Phillips screwdriver to remove the 17.1 mm-long screw securing the expansion slot cover.

Step 6 — Remove the expansion slot cover



- Use your fingers to lift the expansion slot cover near the notch by the screw hole and remove it.

Step 7 — Remove the fan cables cover



- Use your fingers to remove the plastic cover hiding the fan cables connector.
 - ⓘ The cover is secured with light adhesive.
- ★ During reassembly, press the piece of plastic back into place to secure it with the leftover adhesive. If it isn't sticking, use strips of [double-sided tape](#) to secure it.

Step 8 — Free the fan cables



- Gently pull the fan cables out from under their plastic clip on the frame.

Step 9 — Disconnect the fan



- Firmly grip the fan cables white connector head and pull it straight up and out of its socket.
 - ⓘ If you're having trouble, grip the cables just above the [connector head](#), and *gently* pull.
- ☑ During reassembly, align the connector over its socket and push down on the edges with the flat end of a spudger until it slides fully into its socket.

Step 10 — Remove the fan screws



- Use a T8 Torx Security screwdriver to remove the four screws securing the fan:
 - One 31.2 mm-long screw
 - Two 21.3 mm-long screws
 - One 11.6 mm-long screw

Step 11 — Remove the fan



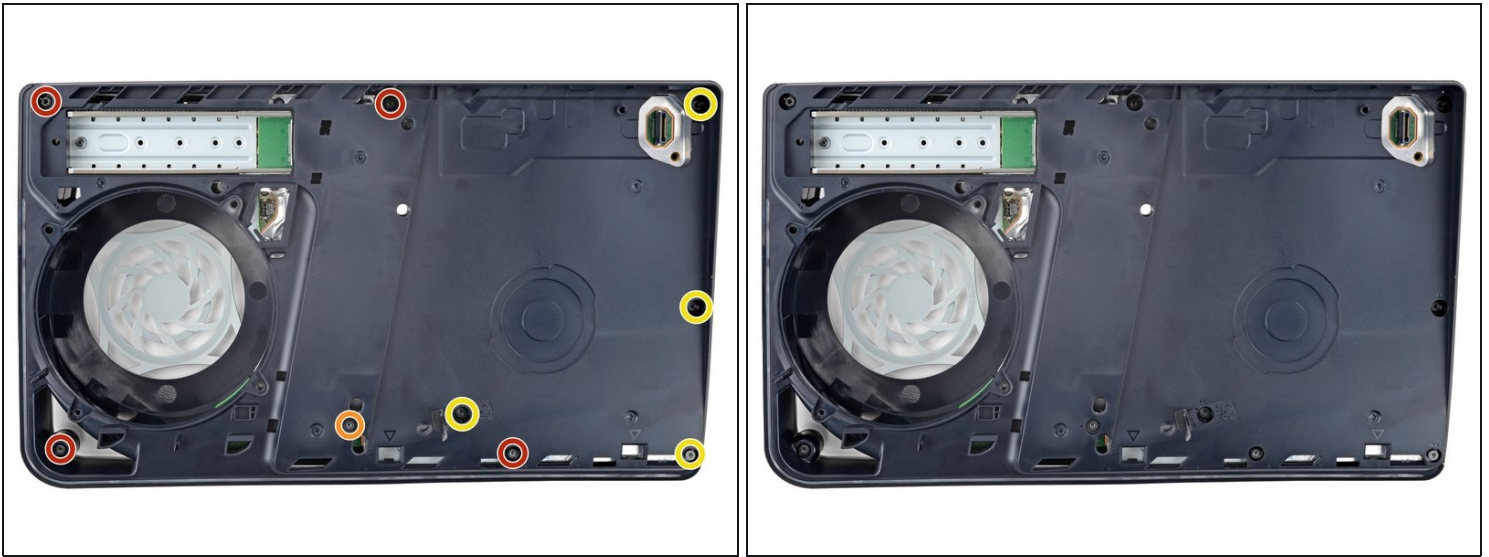
- Use your fingers to grab the fan by its vents, and lift it straight up to remove it.
- ✦ During reassembly:
- ① This is a good point to clean the fan. Use a clean cloth and some compressed air to remove any dust or dirt.
 - Insert the fan so its cables are near their connector.

Step 12 — Peel up the tamper evident sticker



- A tamper-evident sticker hides one of the main board cover screws.
- ① If you live in the U.S., [you're protected under the Magnuson–Moss Warranty Act](#) and these stickers are illegal—don't let them intimidate you! Elsewhere, [warranty protections differ](#).
- Use [tweezers](#) to peel up the sticker up until you can access the screw underneath.

Step 13 — Remove the main board cover screws



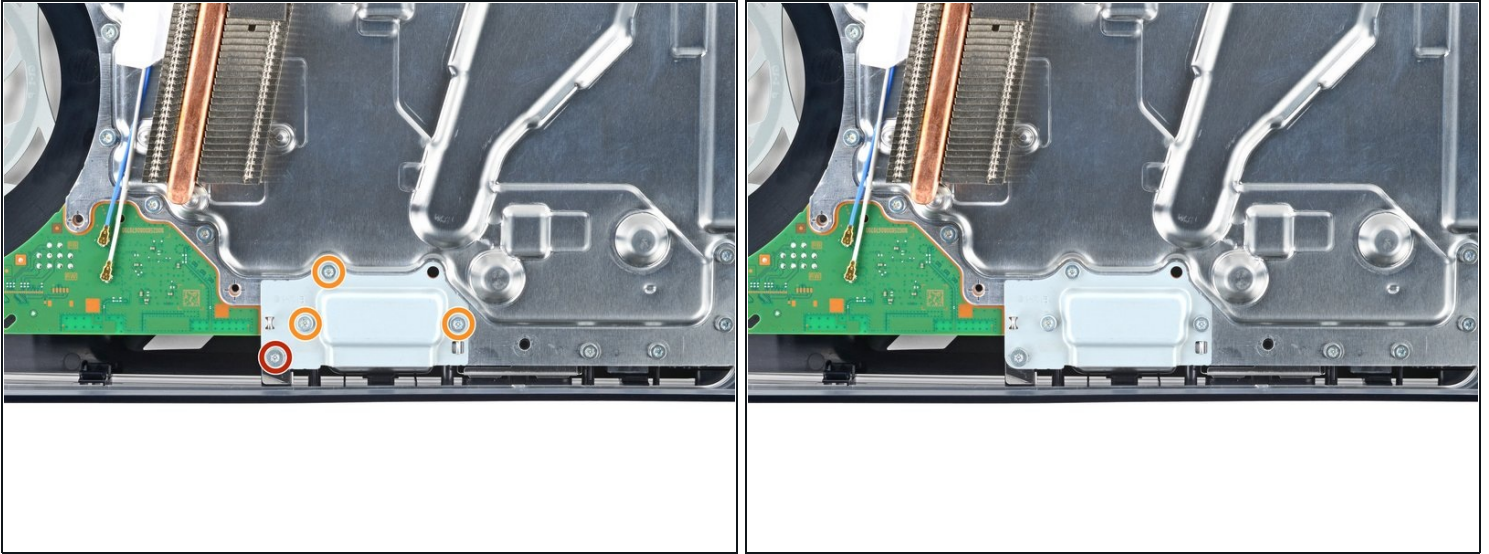
- Use a T8 Torx Security screwdriver to remove the nine screws securing the main board cover:
 - Four 18.9 mm-long screws
 - One 21.3 mm-long screw
 - Four 31.2 mm-long screws

Step 14 — Remove the main board cover



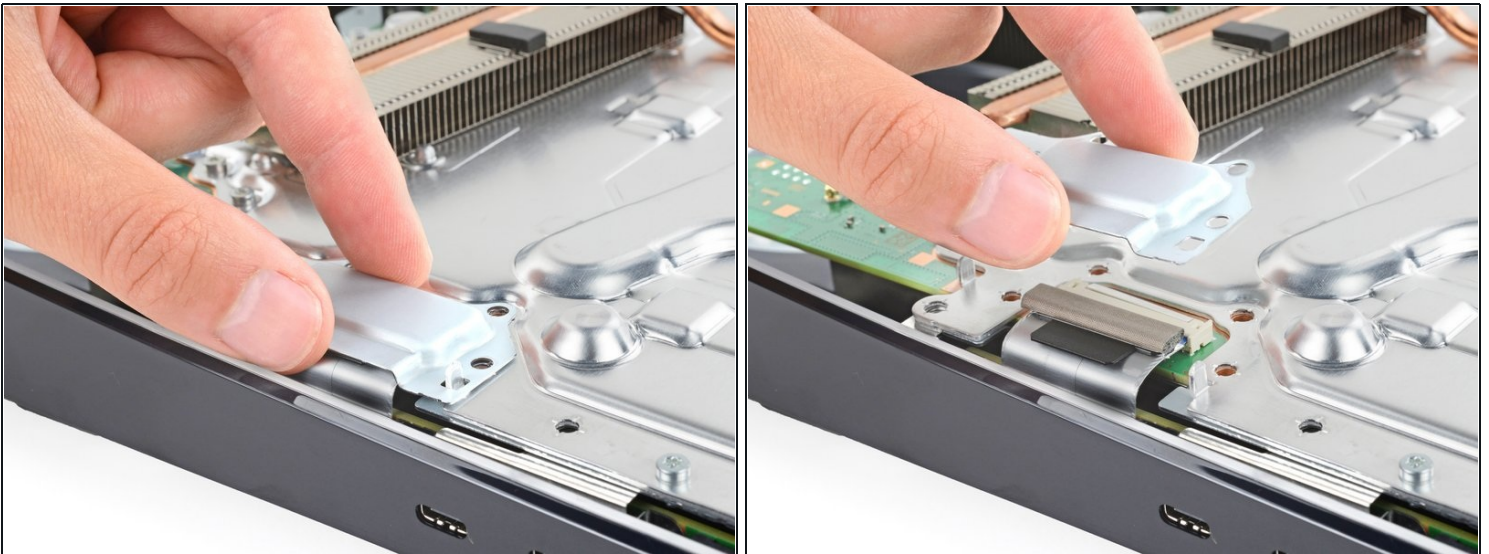
- Lift the main board cover straight up and remove it.

Step 15 — Remove the interconnect cable cover screws



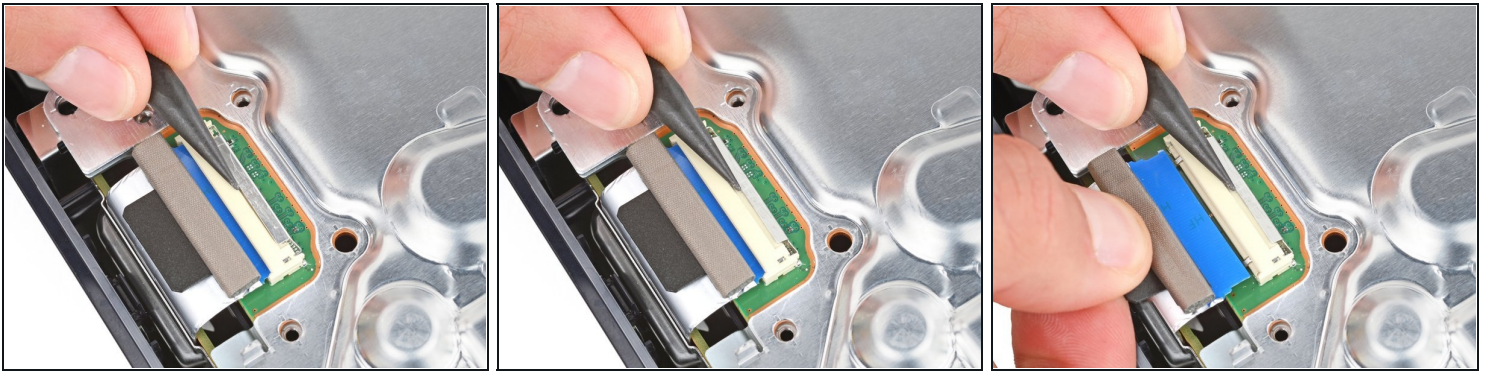
- Use a T8 Torx Security screwdriver to remove the four screws securing the interconnect cable cover:
 - One 28.7 mm-long screw
 - Three 7.5 mm-long screws

Step 16 — Remove the interconnect cable cover



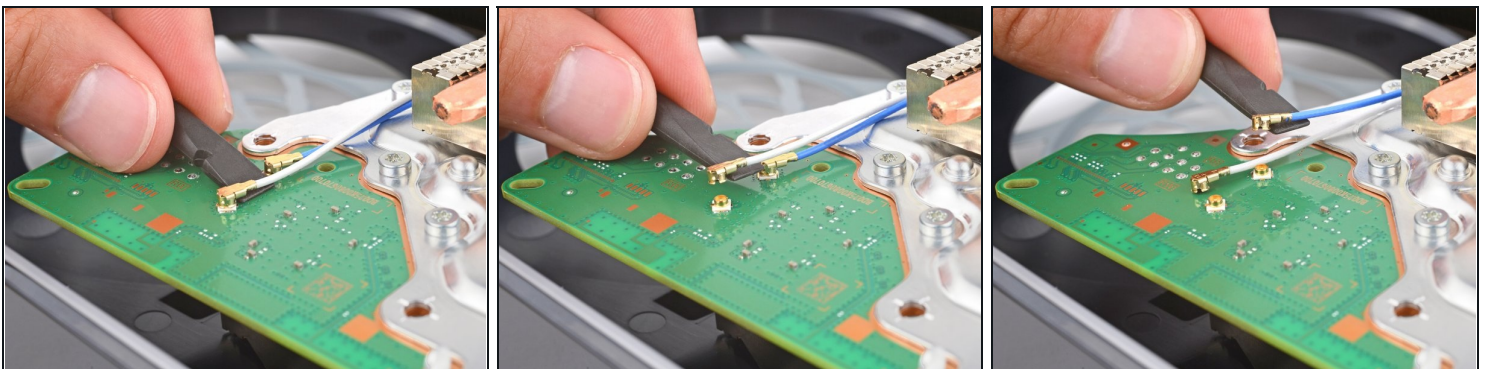
- Remove the interconnect cable cover.

Step 17 — Disconnect the interconnect cable



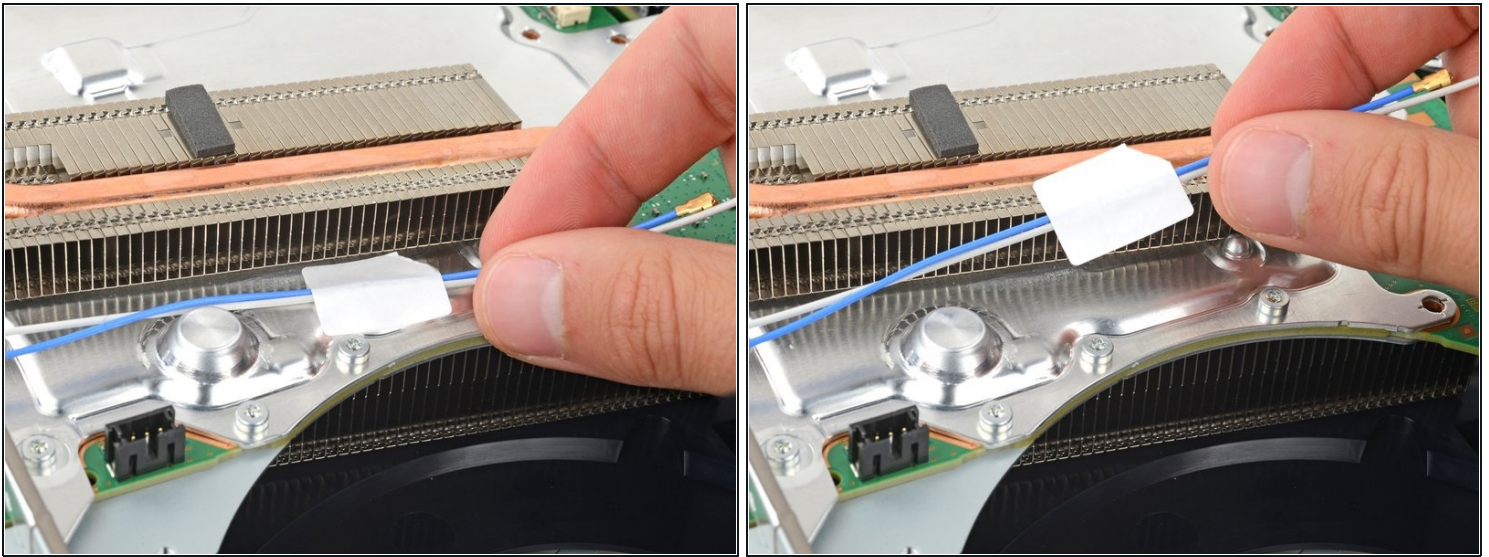
- Use the point of a spudger to push the interconnect cable's metal latch down and away from the connector to unlock it.
- Keep the latch in its unlocked position and carefully pull the interconnect cable straight out of its socket.
- ☑ During reassembly, push the latch into its unlocked position and insert the cable into its socket. Then, push the latch back in place to lock the cable.

Step 18 — Disconnect the antenna cables



- Insert the flat end of a spudger under the metal neck of one of the antenna cable's [coaxial connectors](#) and lift straight up to disconnect it.
- Repeat the process to disconnect the other antenna cable.
- ☑ To reconnect a cable, hold the metal connector head over its socket and press down with the flat end of a spudger until the connector snaps into place. Don't try to force the connector into place. If you're having trouble, reposition the connector and try again.

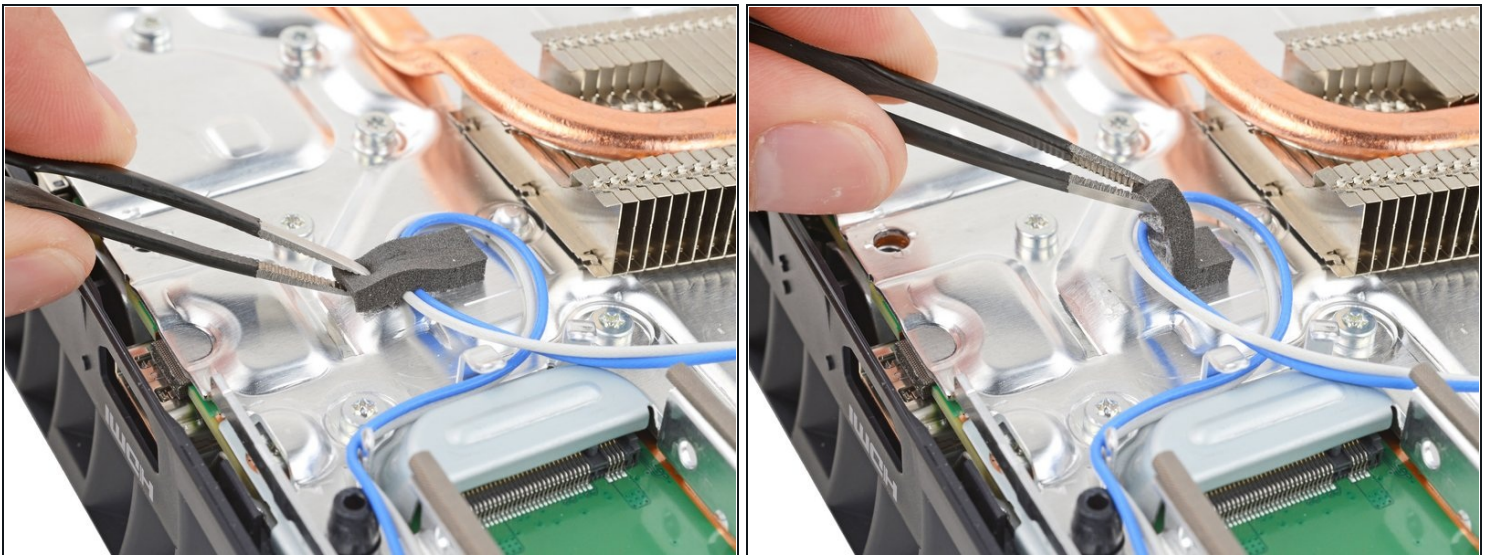
Step 19 — Peel up the antenna cable tape



① A [piece of tape and a block of foam](#) secure the antenna cables to the heatsink shield.

- Gently lift both antenna cables to separate the tape from the heatsink shield.

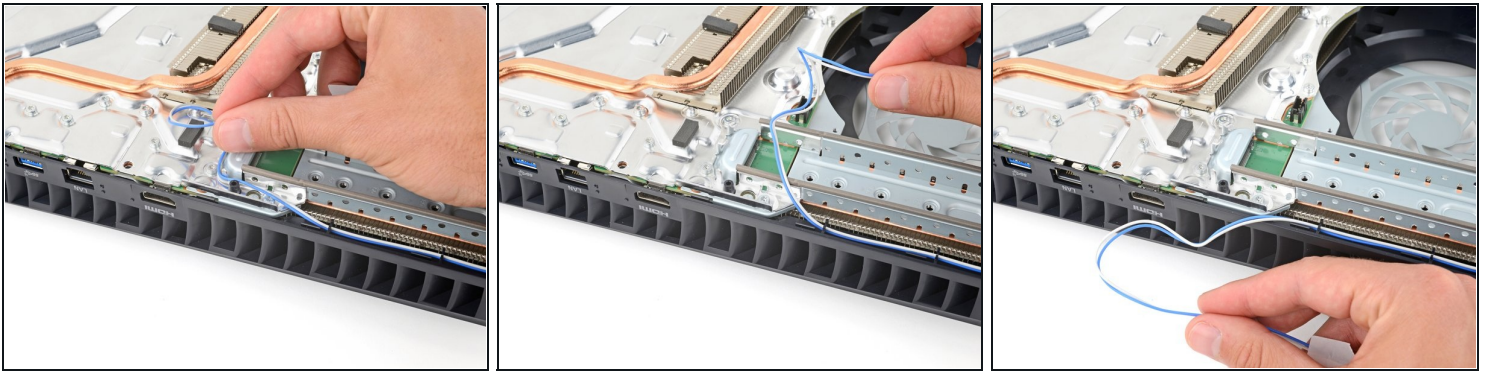
Step 20 — Peel up the antenna cable foam



① Light adhesive secures the foam block to the heatsink shield.

- Use tweezers to gently peel up the foam block.
 - ① If you're having trouble, [heat an iOpener](#) and apply it to the foam for one minute to soften the adhesive. If you don't have an iOpener, you can [use a hair dryer](#) instead.

Step 21 — Reposition the antenna cables



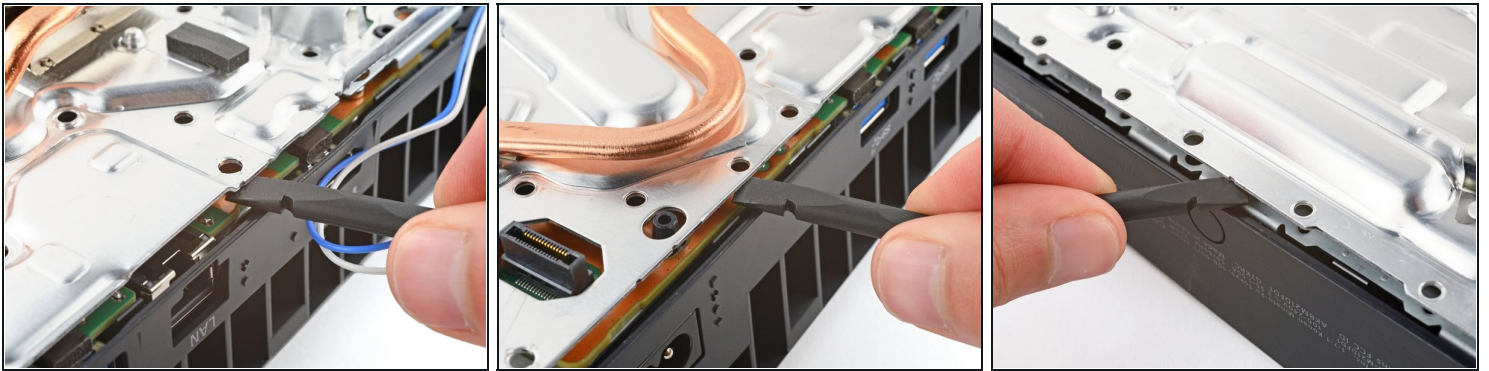
- Move the antenna cables over the side of your PlayStation so they're out of the way.
- ☑ During reassembly, use [this photo](#) as a reference to put the antenna cables back in their original position.

Step 22 — Remove the top shield plate screws



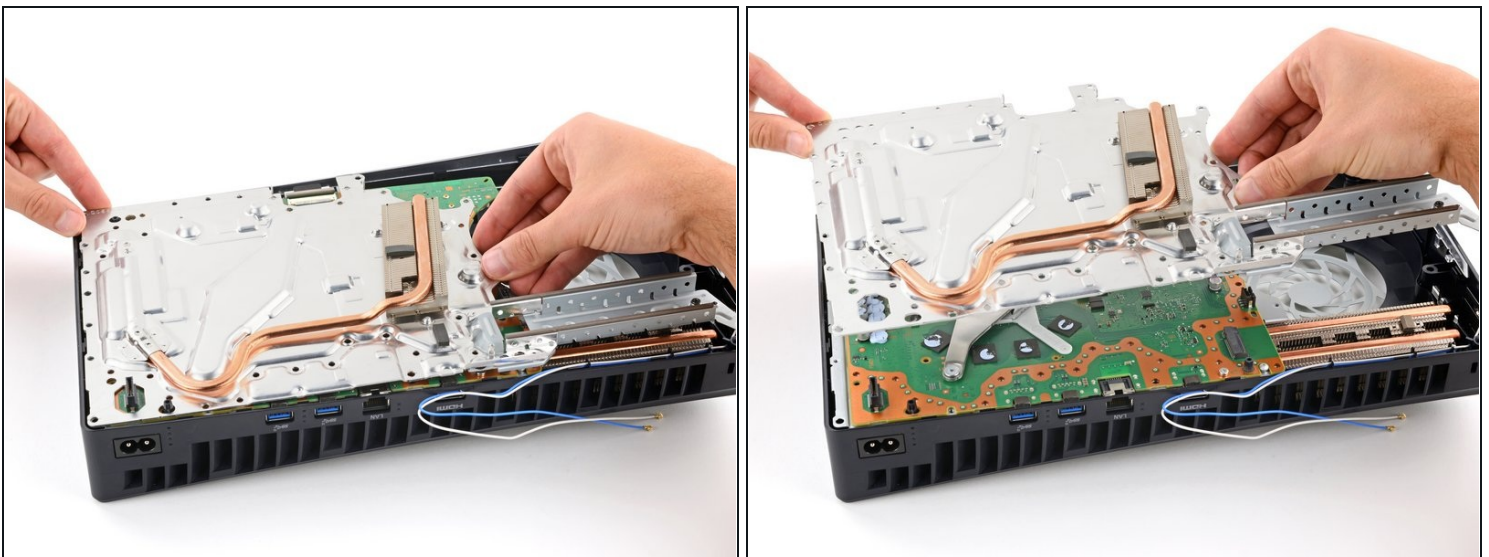
- Use a T8 Torx Security screwdriver to remove the thirty 7.5 mm-long screws securing the top shield plate.

Step 23 — Separate the top shield plate



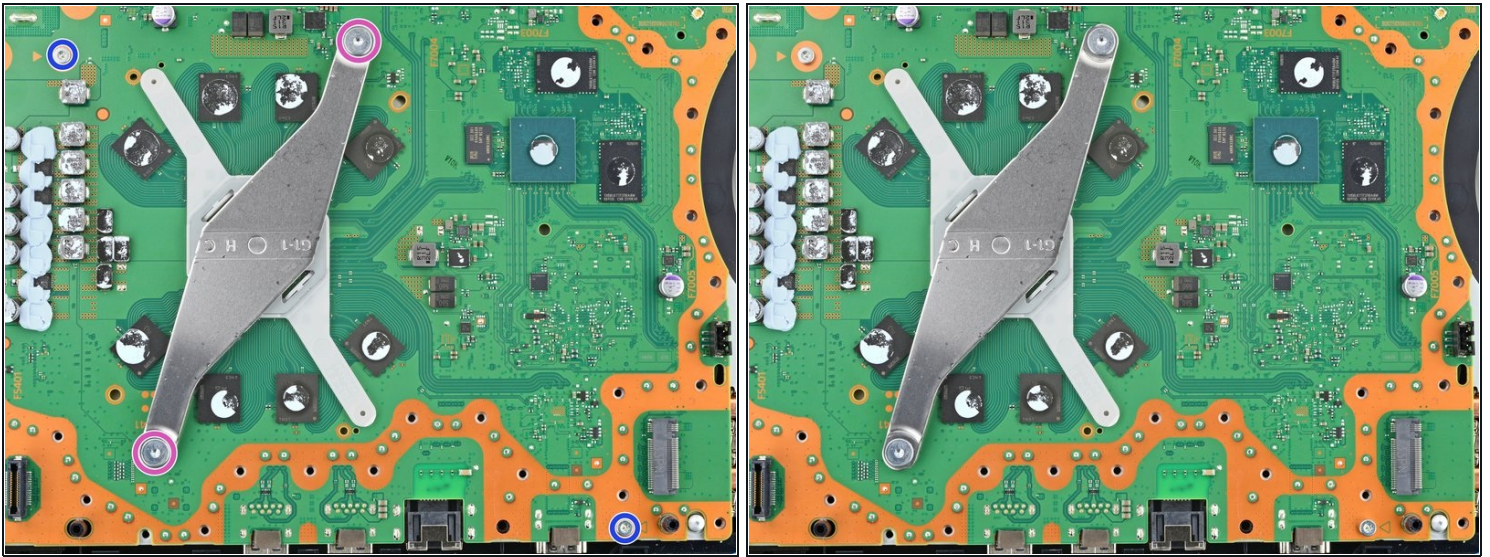
- ⓘ Thermal pads bond the top shield plate to the main board. Depending on the age of your device and conditions of the pads, it may take *significant force* to separate the plate.
- Insert the flat end of a spudger between the top shield plate and the main board and pry up to release the plate. Work your way around the perimeter until it separates completely.

Step 24 — Remove the top shield plate



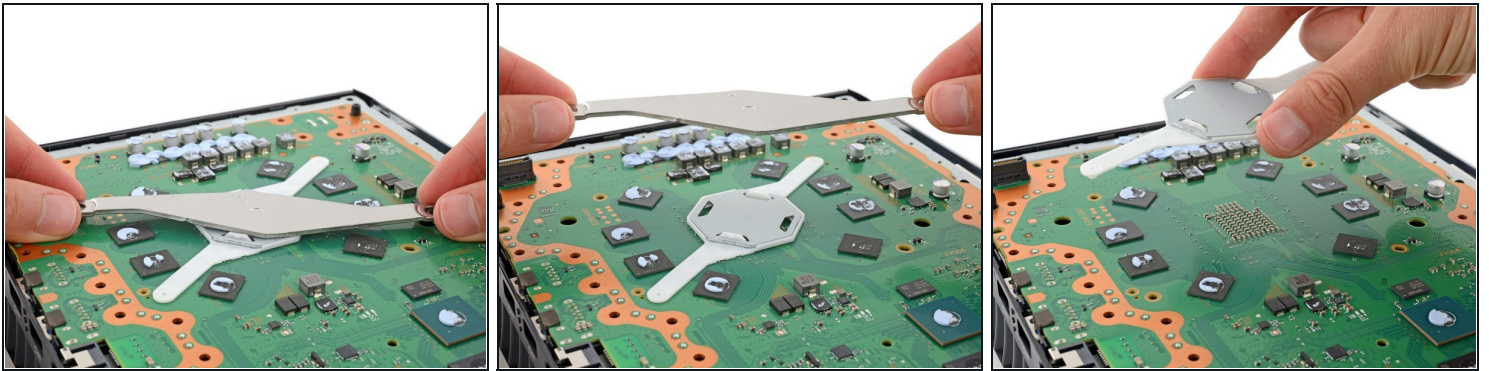
- Lift and remove the top shield plate.
 - ☑ During reassembly, this is a good point to replace any thermal pads on the top of the main board, if necessary. The pads may be stuck to both the top shield plate and the main board.
- ⚠ It's important that the replacement pads are the *same thickness as the originals*, otherwise the foam around the APU may not seal properly.

Step 25 — Remove the main board screws



- Use a T8 Torx Security screwdriver to remove the four remaining screws securing the main board:
 - Two 7.5 mm-long main board screws
 - Two 16.3 mm-long screws securing the APU tension bracket
- ① **Don't remove or install one screw at a time**, or you may damage the APU. During disassembly and reassembly, alternate between the two screws a 1/2 turn at a time to maintain even pressure on the bracket.

Step 26 — Remove the APU brackets



- Lift and remove both APU brackets from the board.

☒ During reassembly:

- Put the bracket with plastic arms on first so the pegs go into their cutouts.
- Then, put the metal bracket onto the plastic one so they're perpendicular and the screw holes line up.

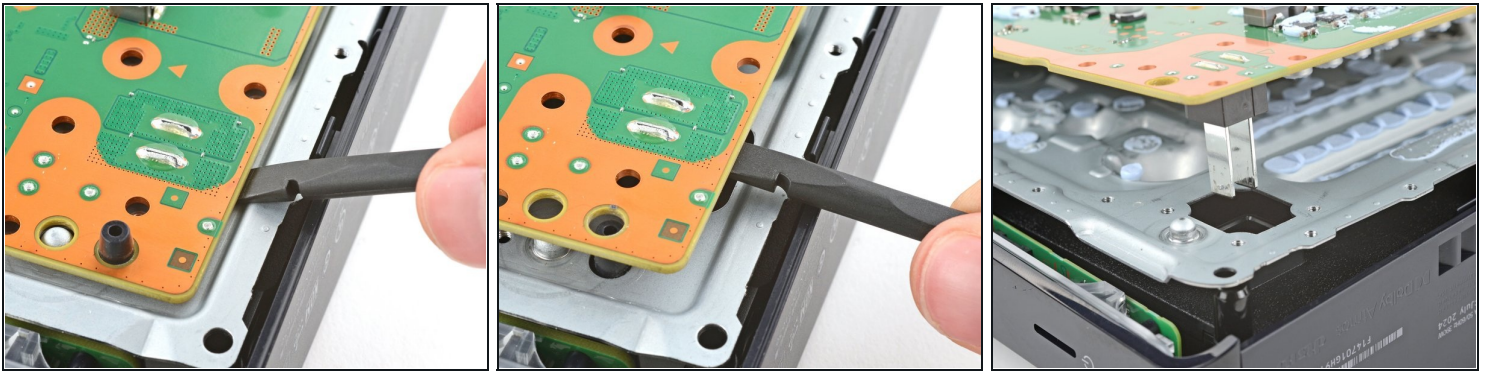
Step 27 — Detach the main board



⚠ Don't try to fully remove the motherboard during this step—the corner near the power button is still secured by metal prongs, which will be disconnected in the next step.

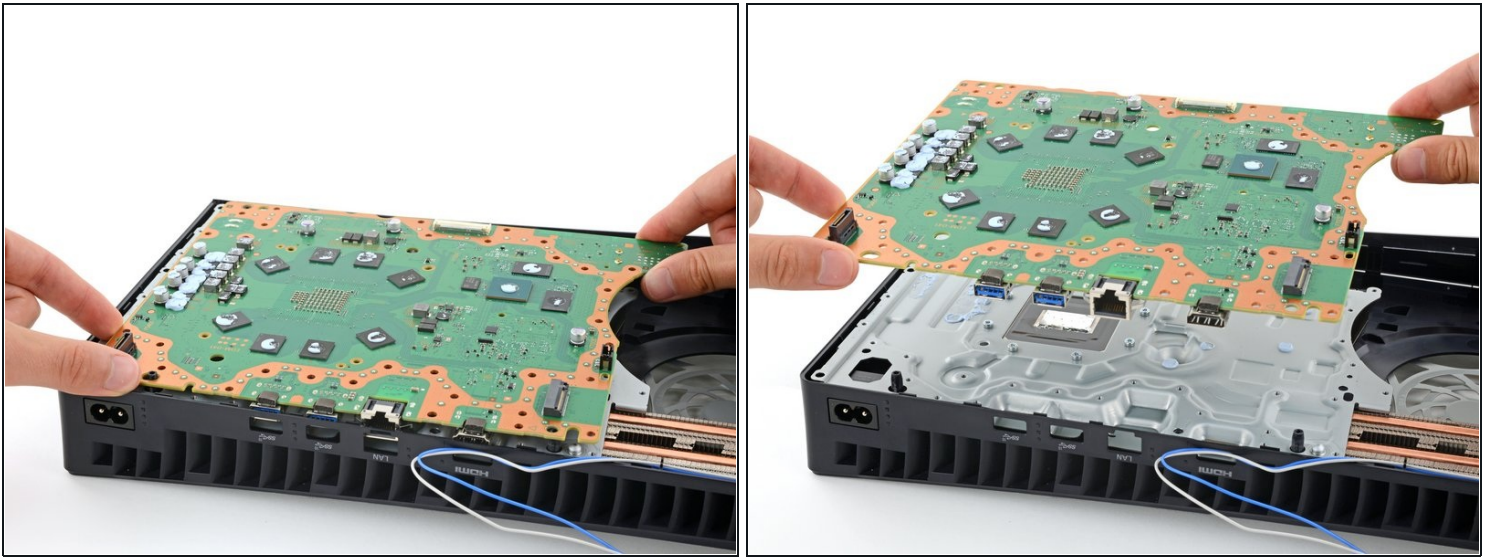
- *Gently* lift the edge of the motherboard with the large cutout to partially separate it from the bottom shield plate.
- With the board lifted, insert the flat end of a spudger between the board and the bottom shield plate and gently twist to separate them. Work your way around the perimeter of the board.
- ⓘ Many small thermal pads bond the main board to the metal shield plate underneath. Depending on the age of your PlayStation and the condition of the pads, it may take significant force to separate the board.

Step 28



- ① The power supply is connected to the bottom of the main board assembly by metal prongs that plug into the bottom left corner.
- Insert the flat end of a spudger between the board and the lower shield plate, by the two parallel solder joints near the corner with the power button.
- Use your spudger to pry up the board until the two prongs come completely out of their socket.
 - ① You should feel the prongs slide out.
- ☑ During reassembly, press down on the corner of the board to fully seat the prongs in the power supply—you should feel them slide into place.

Step 29 — Remove the main board



- Remove the main board, flip it over, and carefully lay it on a *clean* work surface, so the [APU](#) is facing up.

⚠ Don't press the board against your work surface, or you may damage fragile components.

★ During reassembly:

- Make sure all cables that connect to the board are out of the way so they don't get trapped underneath.
- *Carefully* flip the board over so the APU is on the bottom, making sure no liquid metal spills.
- Keep the board level and lower it into place.

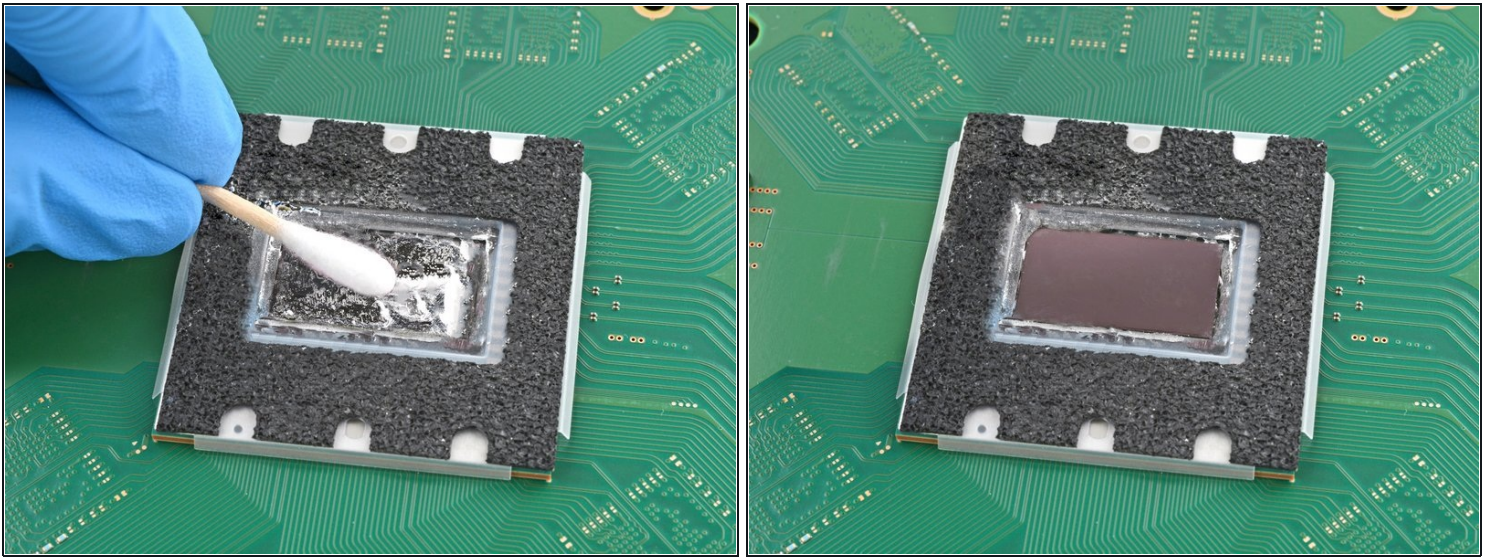
Step 30 — Remove the old liquid metal from the heatsink



⚠ Wear gloves to protect your skin from the liquid metal.

- If you have a disposable [syringe](#), you can use it to [suck up](#) any large pools of liquid metal. Don't use the syringe containing your new liquid metal.
- Starting with the heatsink: apply a few drops of highly-concentrated (greater than 90%) isopropyl alcohol to a cotton swab and carefully clean up all of the liquid metal from the heatsink surface.
 - ① Removing the liquid metal can be tricky—it spreads and smears easily. Switch to new cotton swabs and apply more alcohol as necessary.
- Use the same cleaning process to thoroughly clean up *all* of the liquid metal residue.
 - ① The surface needs to be **completely clean** for the new liquid metal to work properly.
- Let the heatsink dry completely.

Step 31 — Remove the old liquid metal from the APU



ⓘ Don't remove the foam barrier that surrounds the APU.

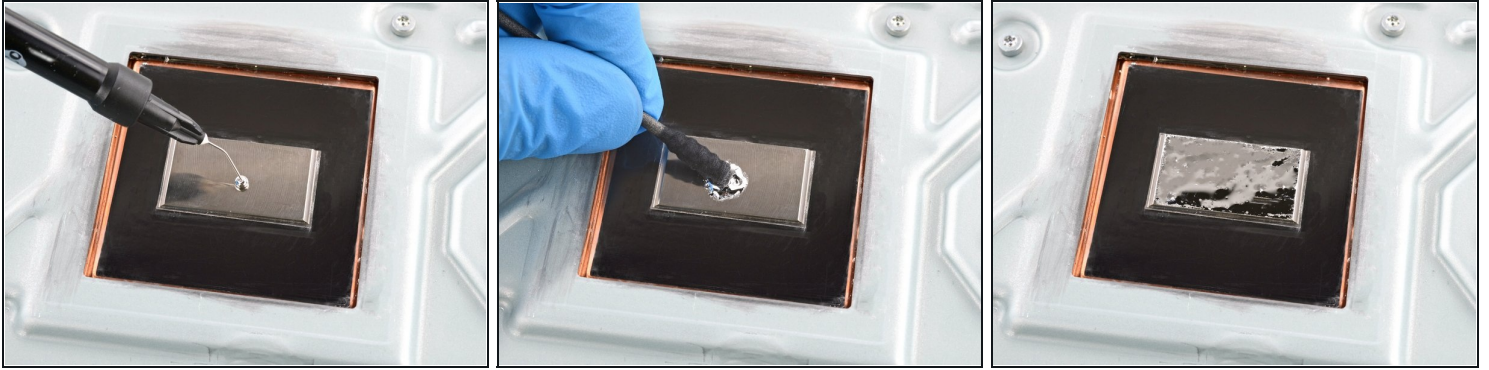
- Just as you did for the heatsink, clean and remove all of the old liquid metal and its residue from the APU.

⚠ Don't let any of the liquid metal drip onto the board. Liquid metal is conductive and could cause a short. The foam barrier keeps the liquid metal from leaking out.

- This is a good point to replace any thermal pads on the *bottom* of the main board, if necessary. The pads might be stuck to both the bottom shield plate and the main board.

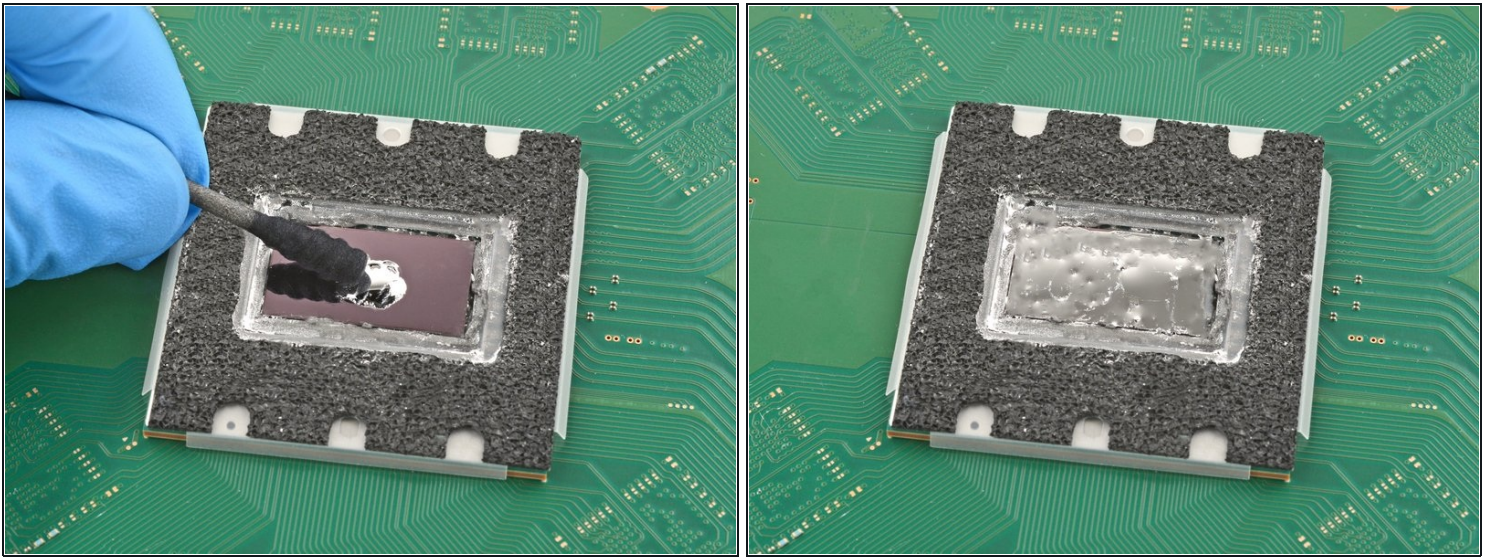
⚠ Make sure your replacement pads are **the same thickness** as the originals, or the foam around the APU may not seal properly.

Step 32 — Apply new liquid metal



- Apply a small drop of liquid metal to the heatsink (not the APU)—about the size of a small matchstick head.
 - ① If your liquid metal syringe has multiple applicator heads, use the one with a small, needle-like tip.
- Use the spreader that came with your liquid metal or a new cotton swab to lightly push down on and evenly spread the liquid metal across the entire surface.
- If there's excess liquid metal anywhere, use the syringe to suck it back up.

Step 33



- ① Your cotton swab from the previous step should still have some liquid metal left on it.
- Use the same cotton swab to spread a thin layer of liquid metal evenly onto the APU. If you need more liquid metal, *lightly* dab the cotton swab on the heatsink to transfer some, or apply a very small drop from the syringe.
- ① The main board is now ready for reassembly.

To reassemble your device, follow these instructions in reverse order, starting with [this step](#).

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.