# Pocket Power Pocket Install Instructions

These instructions will go over the complete instructions to install a Pocket Power Pocket into a GameBoy Pocket.

Please read through these instructions entirely before attempting to install.

WARNING: If you are not comfortable with soldering, or performing any step in this guide, DO NOT PERFORM THE INSTALL YOURSELF. Find someone who is comfortable to do it for you.

WARNING: This mod contains a lithium battery. Do not puncture, overheat, short, or otherwise damage the battery. Only use the battery included in the kit.

This mod, when properly installed, should allow your gameboy pocket to safely use a lithium battery. Special care and attention has been put into managing the charge state of the battery. The Pocket Power Pocket should prevent the battery from damage due to over discharge and over charging. With that being said, by installing this, you acknowledge that lithium batteries can be volatile and, while rare, can fail in potentially violent ways. You are accepting this risk by installing and Thunder Technologies will not be held liable.

Alright! With the warnings out of the way, let's get started!

Tools and Materials



1. GameBoy Pocket
2. Philips screwdriver
3. Flat file
4. Round file
5. Desoldering braid
6. Solder sucker
7. Pocket Power Pocket kit
8. Flush cuts
9. Triwing screwdriver

If you already know how to safely remove a GameBoy motherboard, skip to Page 9
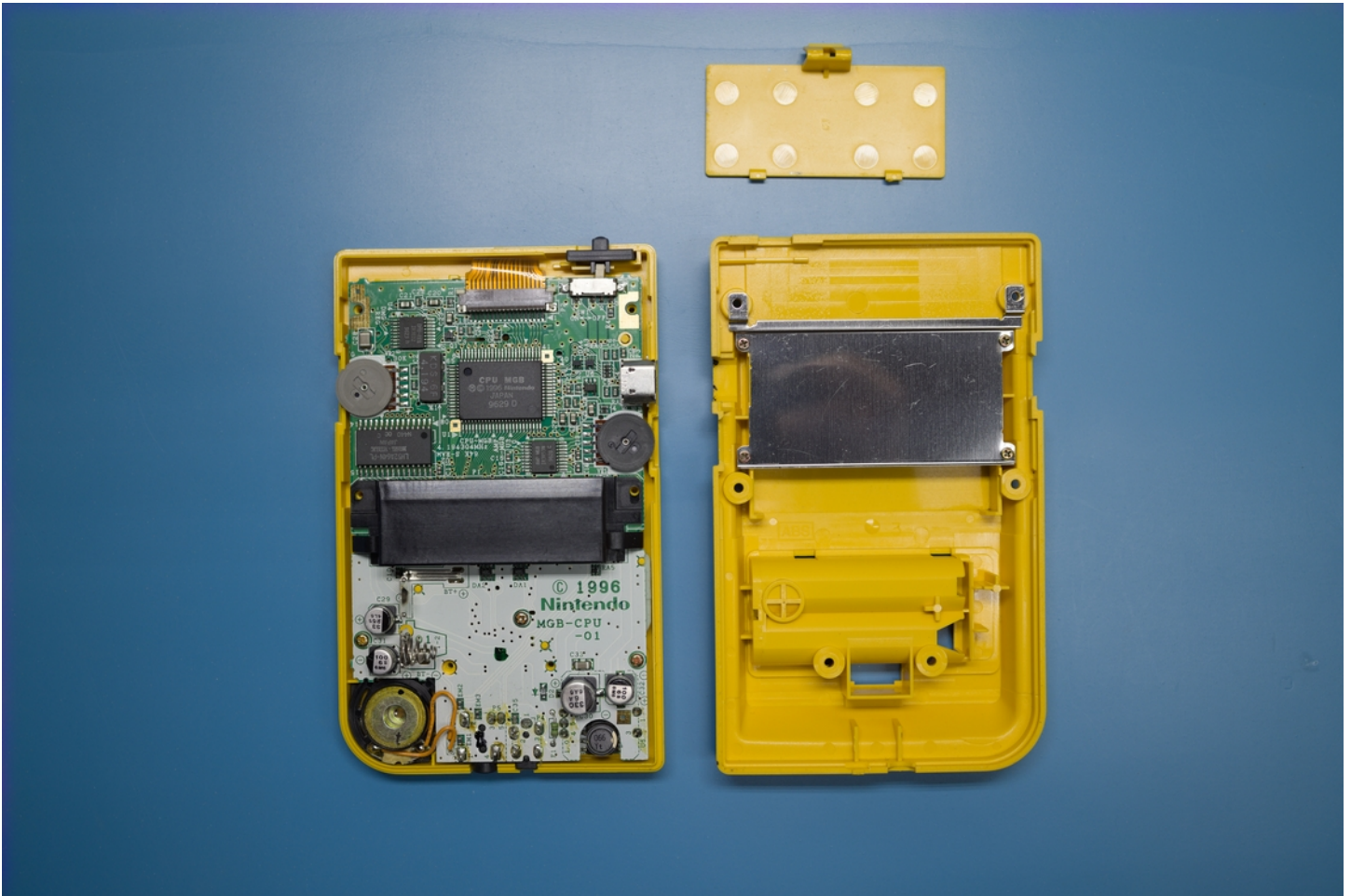
Step 1



Remove battery cover to expose two screws underneath. Remove all 6 screws using triwing screwdriver.

Right now we have 3 pieces, the battery cover, shell with motherboard, and shell without motherboard. Our focus will be on the shell with the attached motherboard. Set the other two aside.
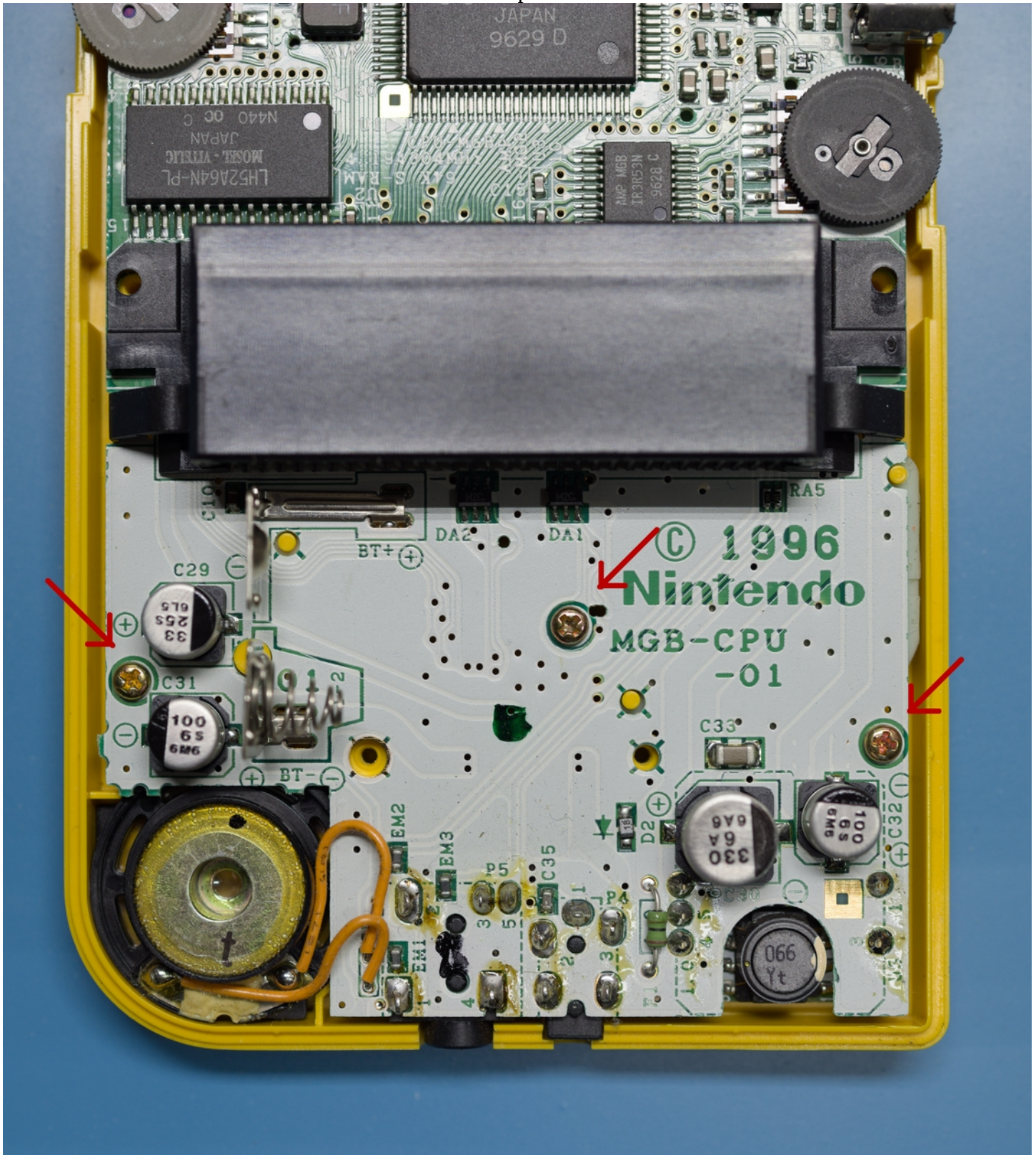
Step 2
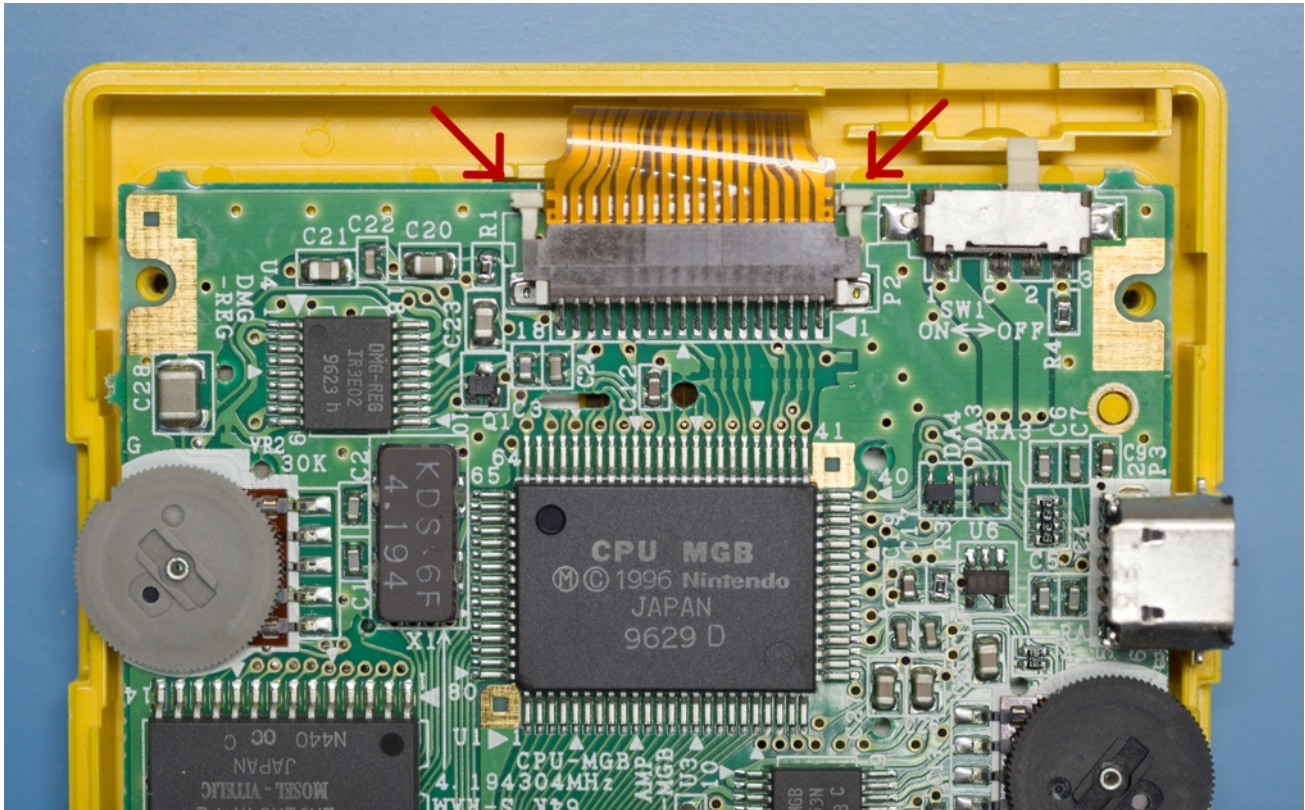
gently pull the two tan colored tabs  indicated by the arrows up towards the top of the GameBoy.
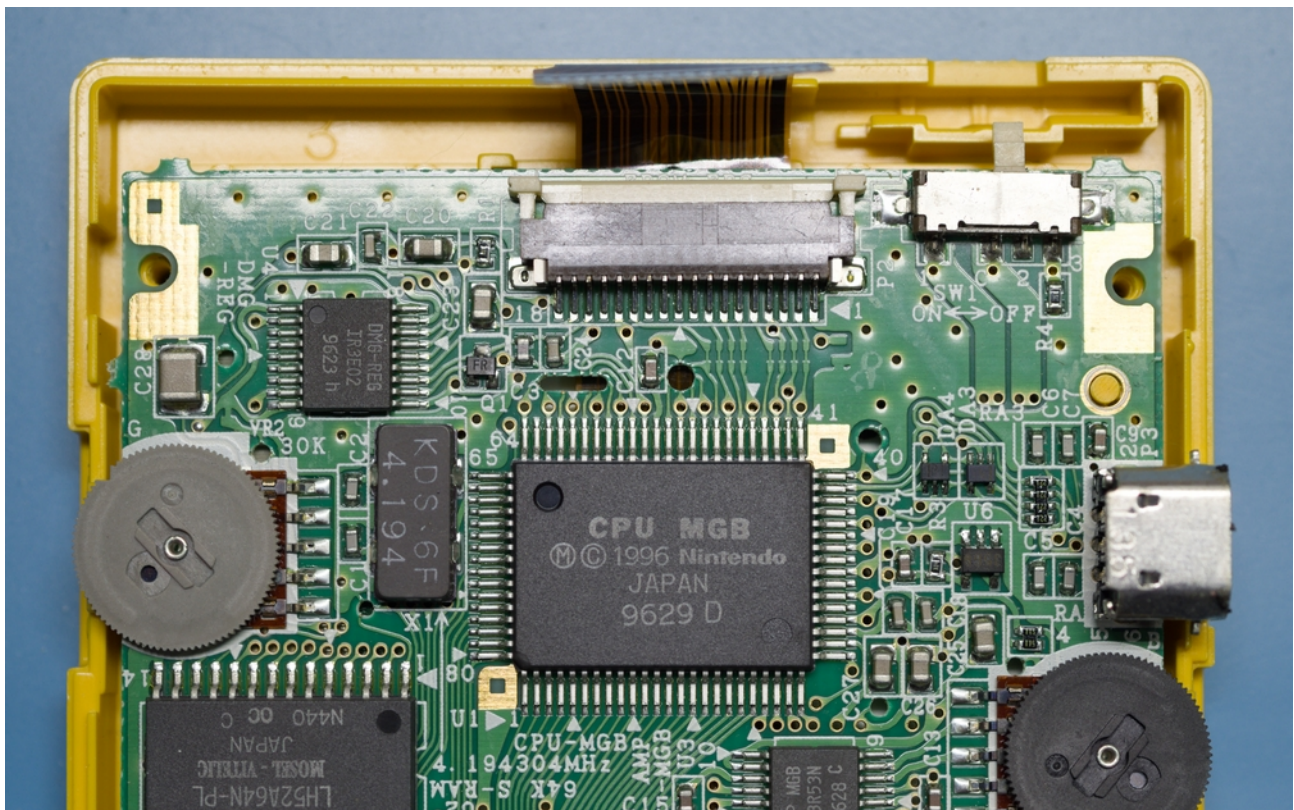


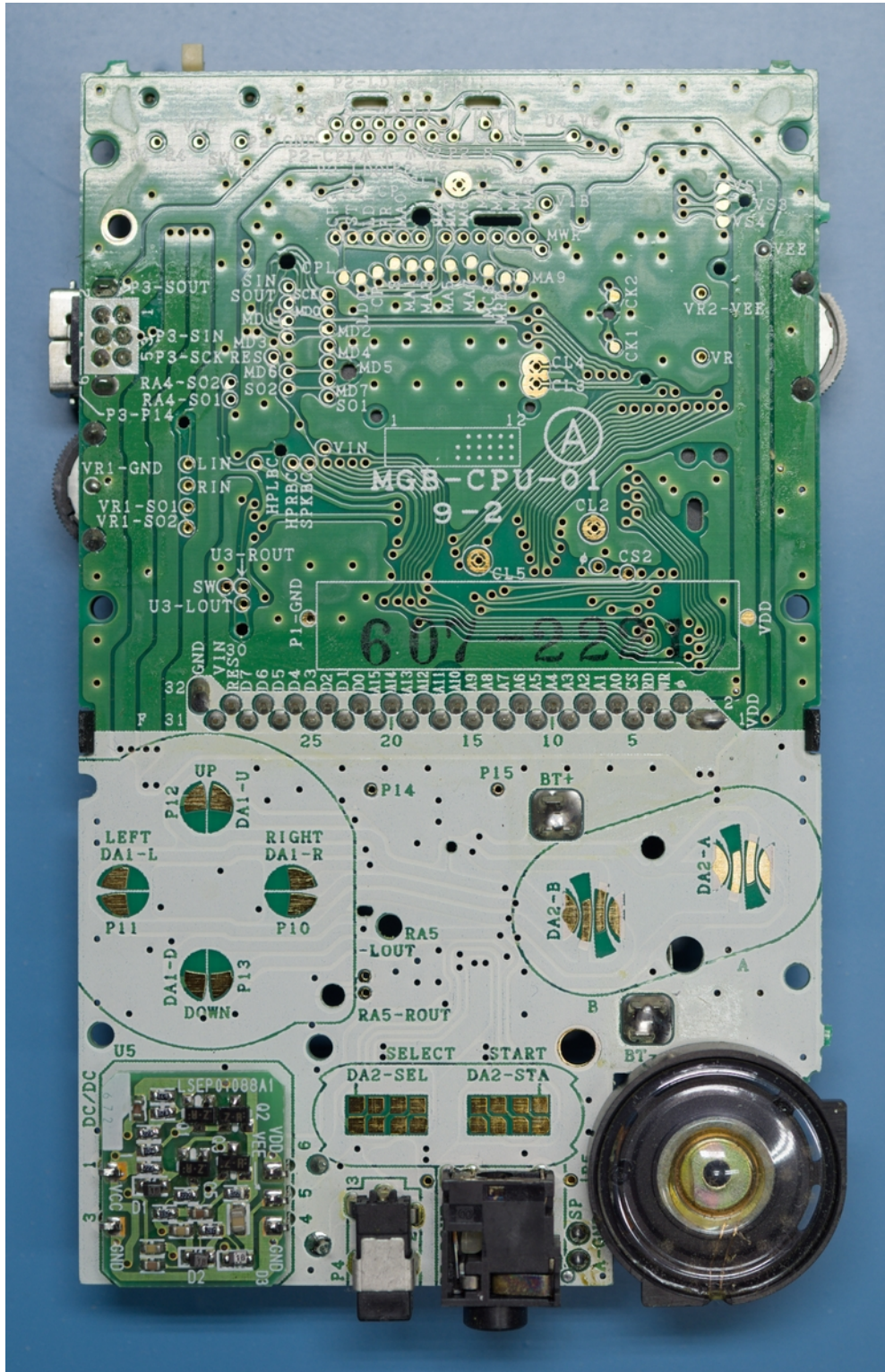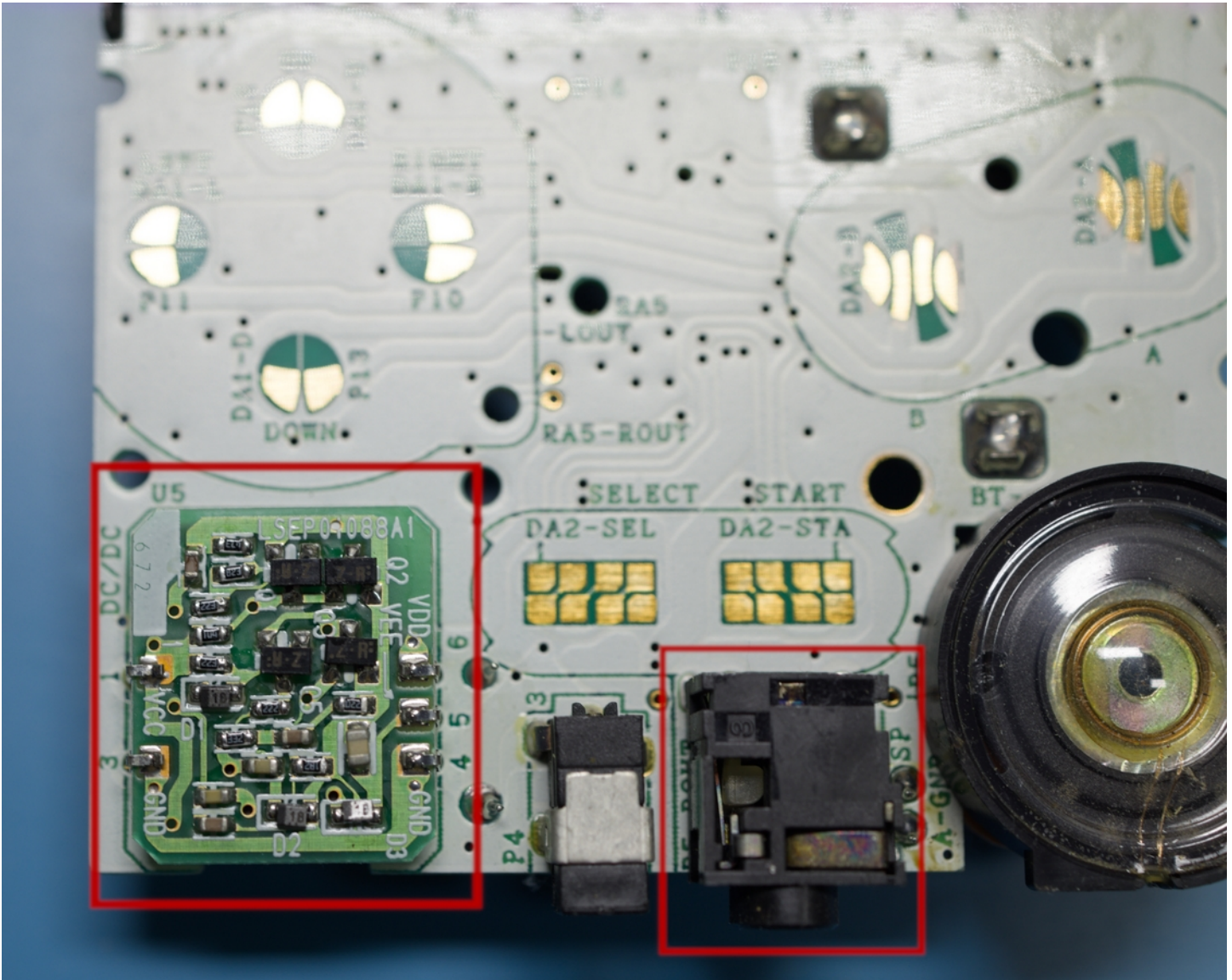Gently pull the display ribbon cable away from the motherboard

Step 3



Remove the 3 screws indicated  by the arrows using a phillips screwdriver

now we have the gameboy motherboard out. Our focus will be to the lower left .

DC Jack and regulator Removal
We will be removing the regulator and DC jack  in these next steps
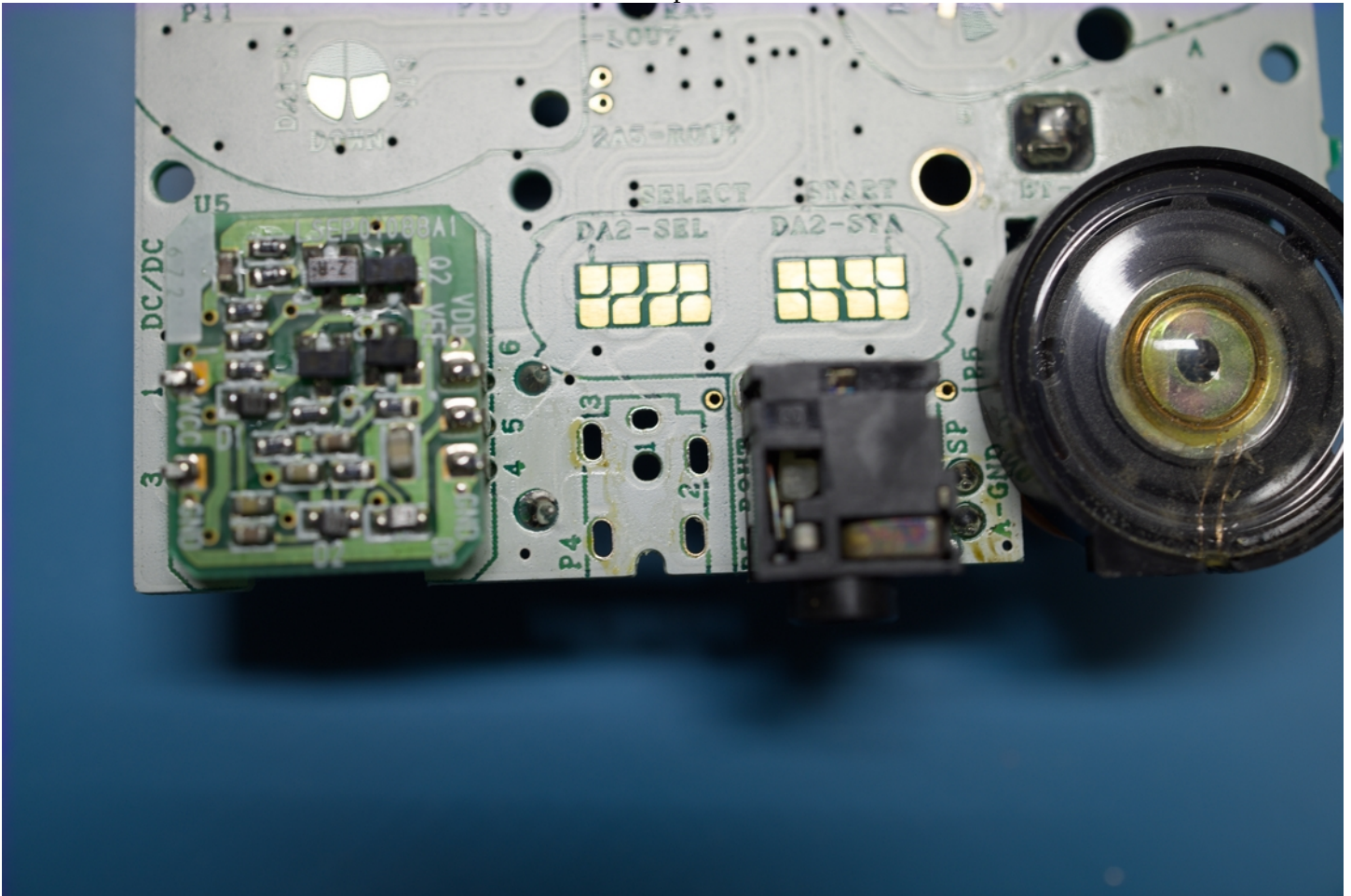
Step 4



Desolder these 5 solder joints to start removing the DC jack



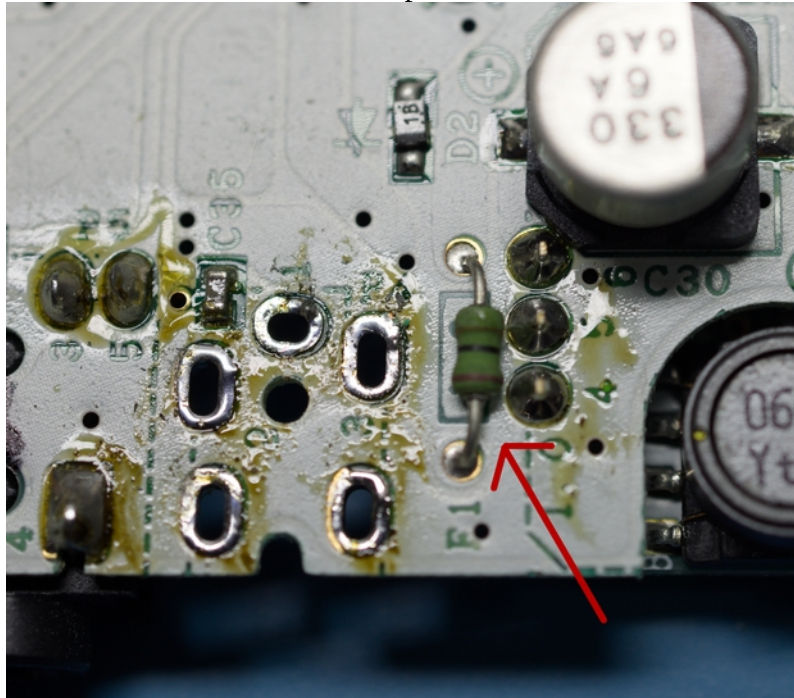With the solder removed, you should end up with something like this.

Step 5



Remove the DC jack. It shouldn't take too much force to remove.
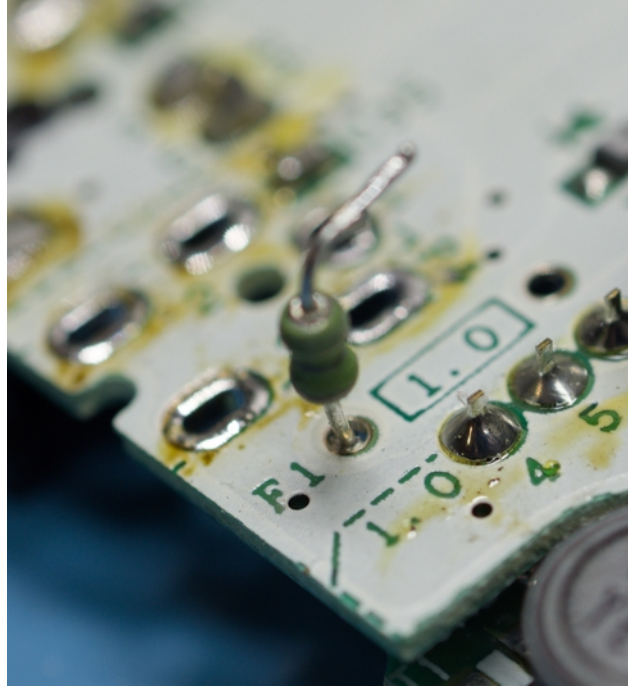
Step 6



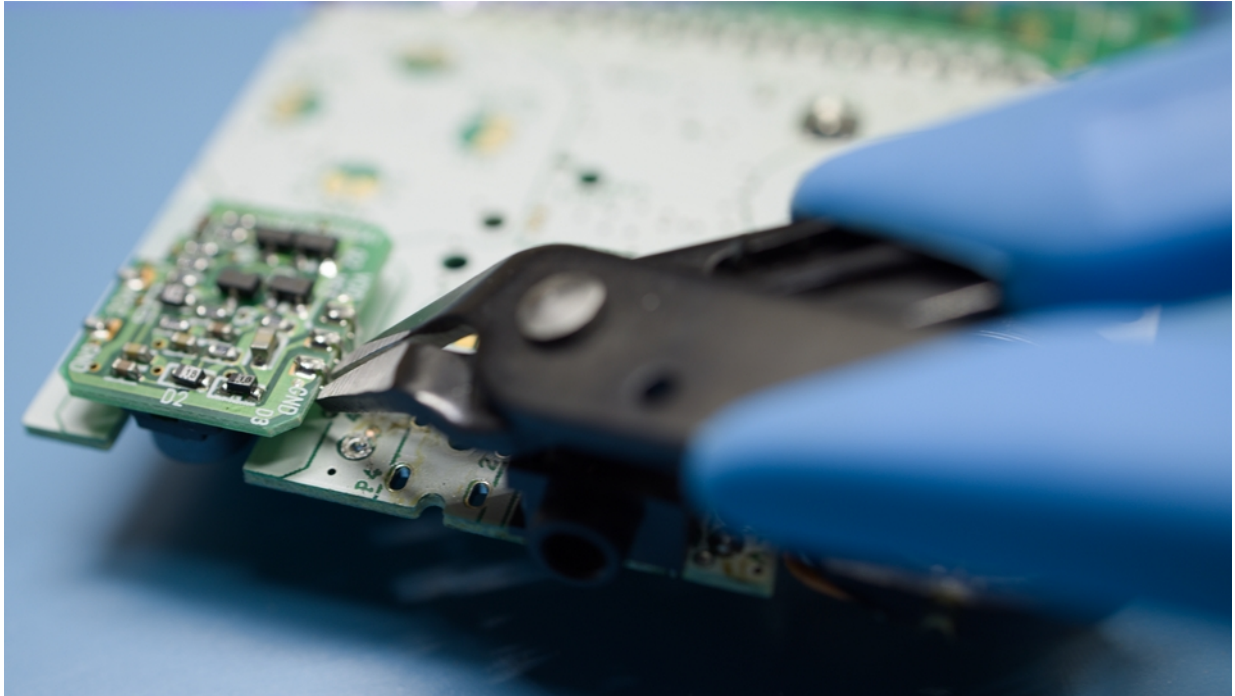Next we'll be removing this fuse (yes, it looks like a resistor).



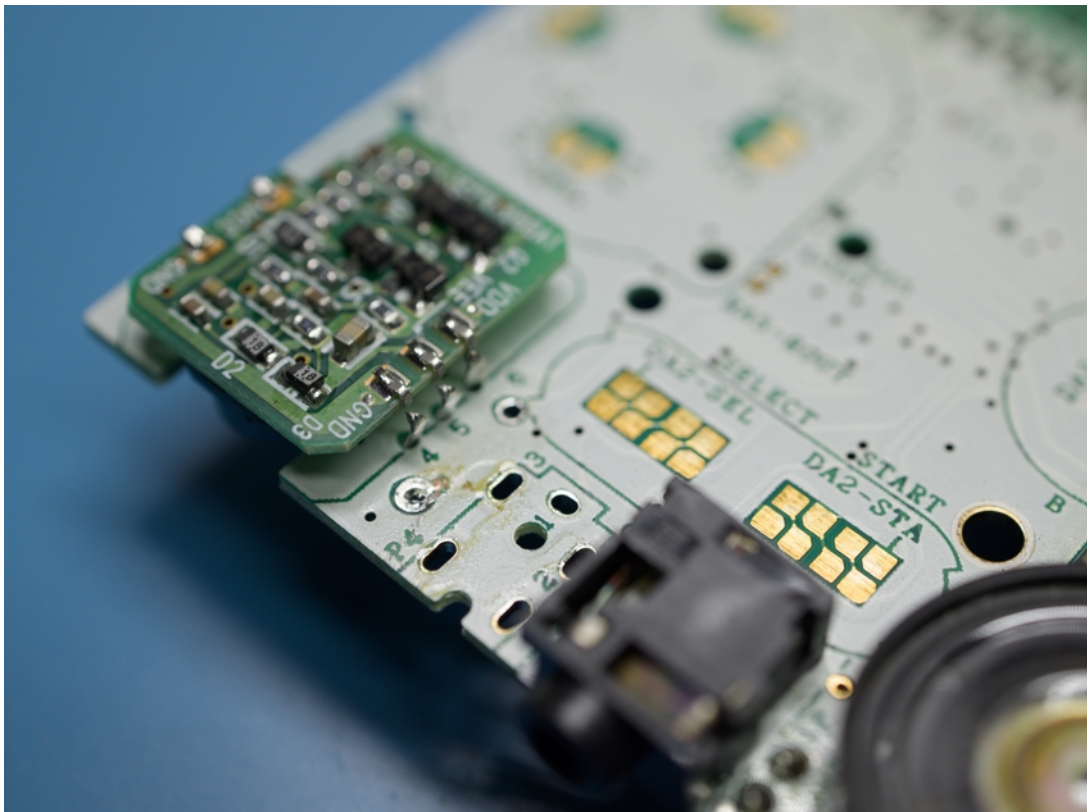On the front side of the board, desolder these two solder joints.

I find that sometimes I have to lift one leg of the fuse and then pull the other out.
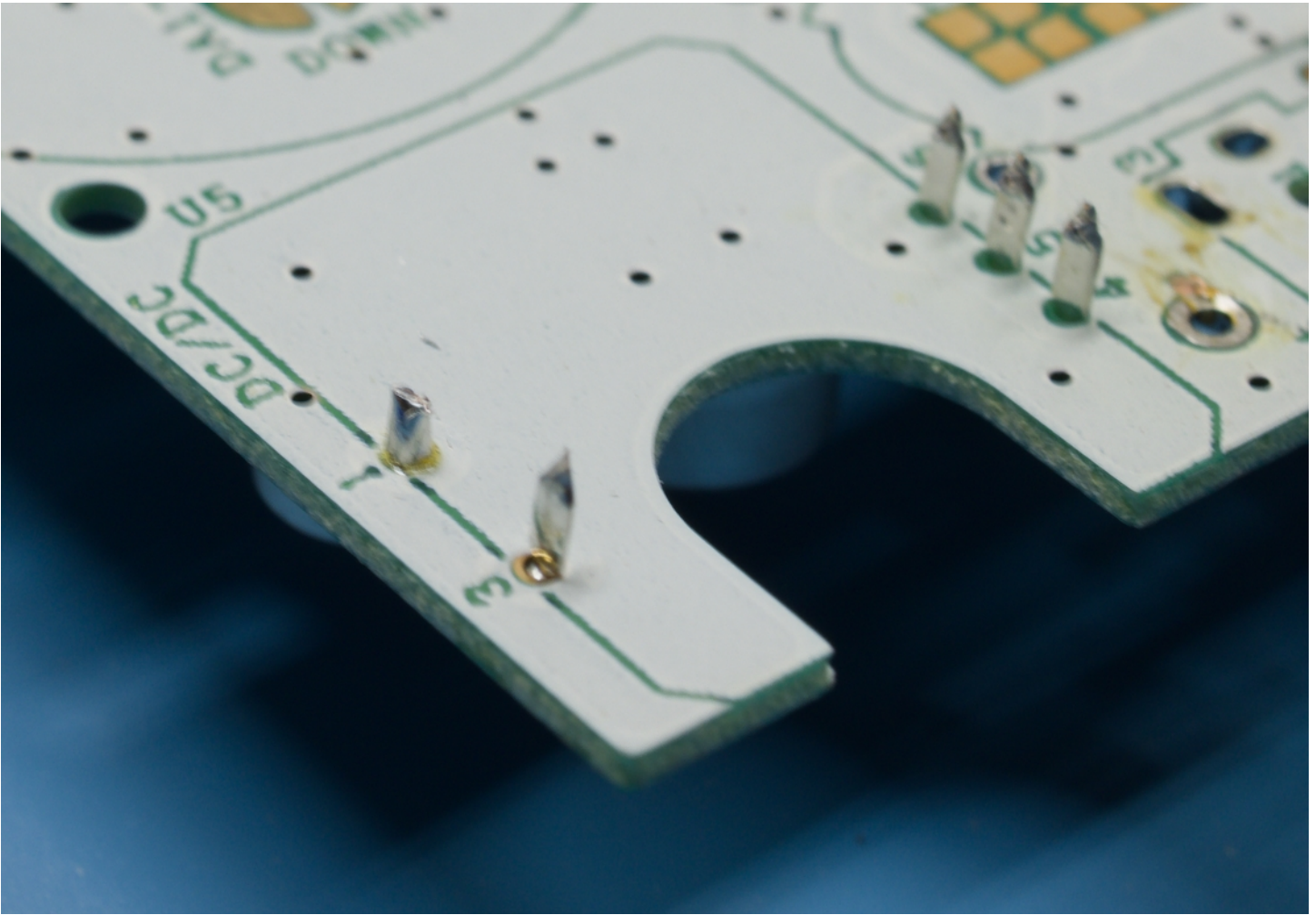
Step 7



Cut the legs of the regulator board as close to the regulator itself as you can get. Use the flush cutters for this.



You should end up with cuts that look like this. Repeat for the two pins on the left side of the regulator

You should have pins like this poking out of the board. If you broke any of the pins, clean the solder and broken pin out of the hole where the broken pin was, then, solder a length of wire into that hole and have it protrude out of the board. These pins will be what we solder the Pocket Power Pocket to later.
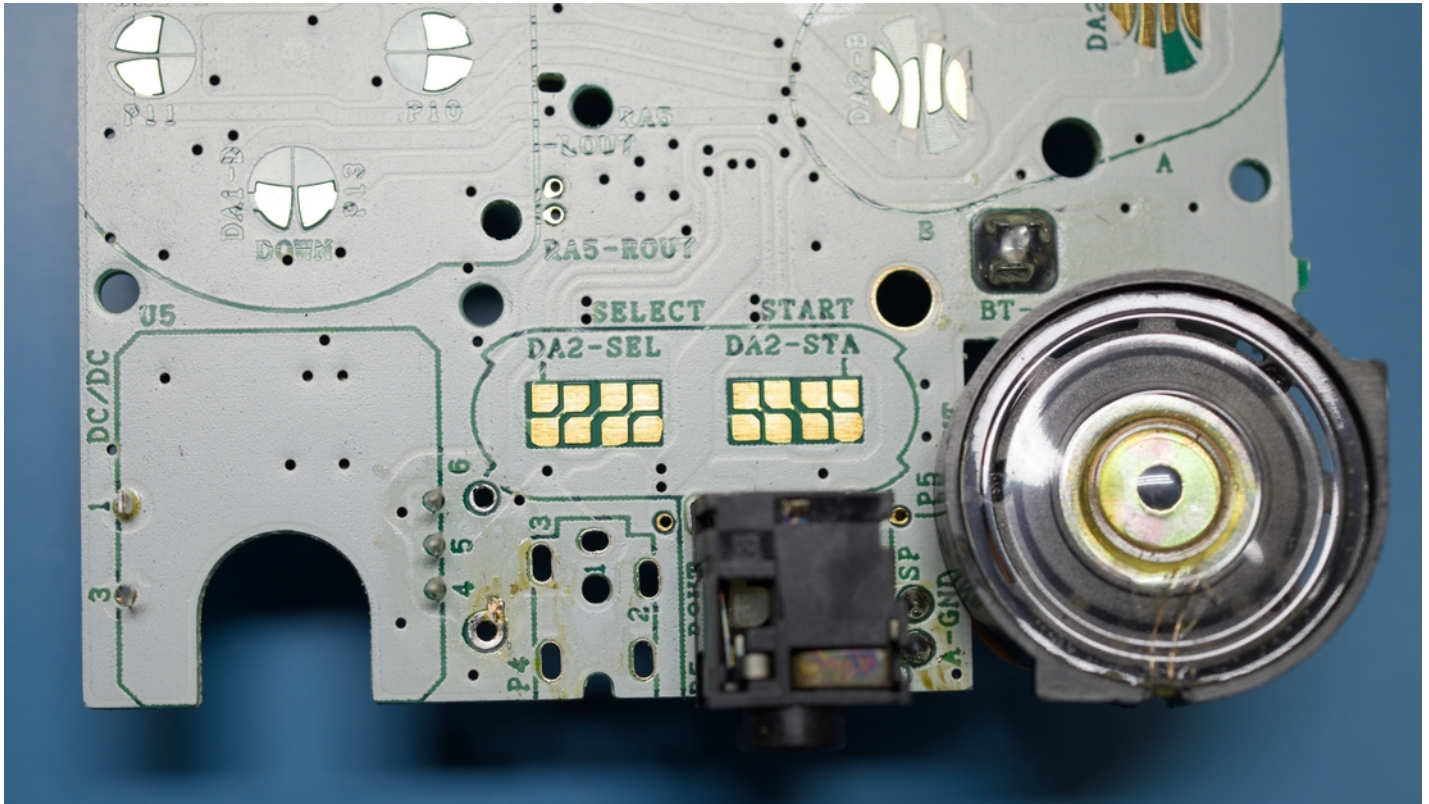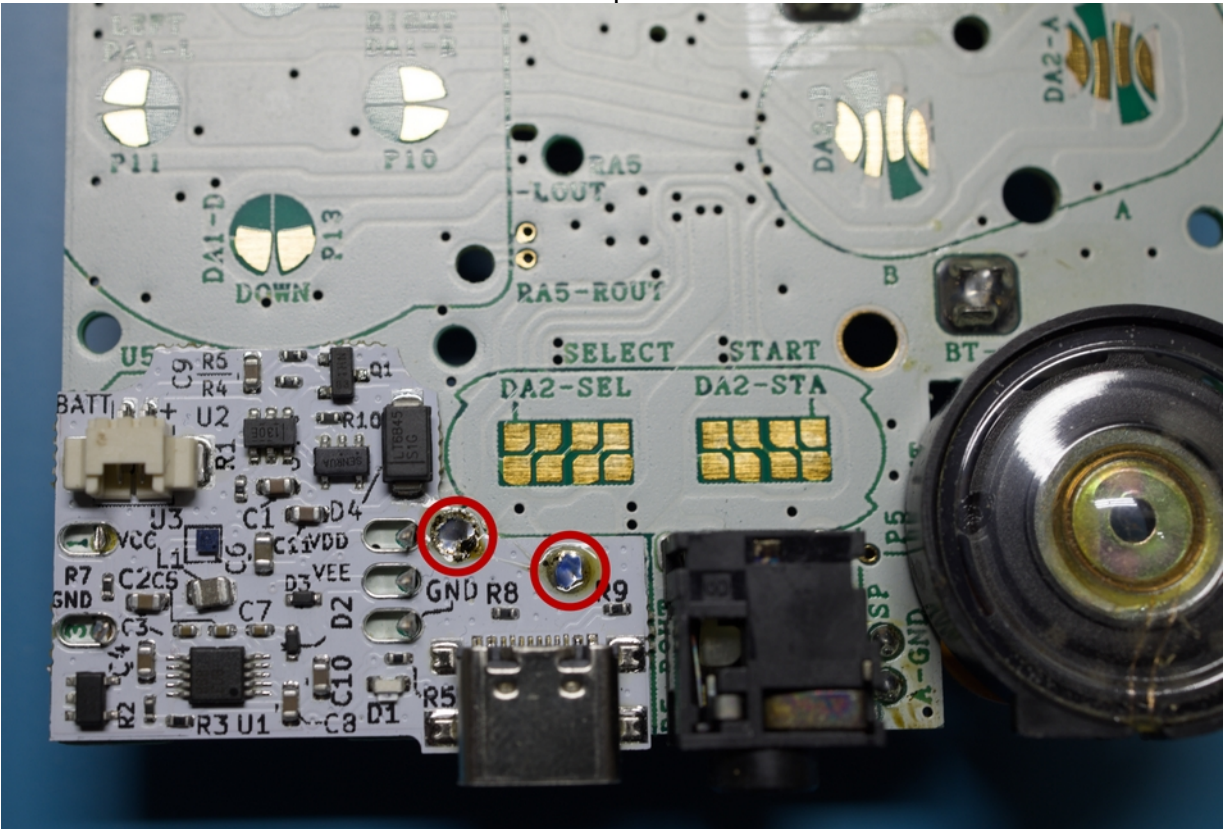
At this point, the GameBoy looks like this. Next we'll be placing the pocket power pocket board on the GameBoy motherboard

Step 8



Place the board onto the GameBoy motherboard. Aligned the bottom left corner of the pocket power to the bottom left corner of the GameBoy motherboard. Ensure that the left and bottom edges of each board are aligned with each other. At this point, the two spots circled above should line up with the pads on the GameBoy pocket. Solder one pad, and check the alignment. If alignment is off, remelt the solder and shift the pocket power until it is aligned. Solder the other pad as well.

NOTE: The this is the most likely place for a person to mess up this install. The solder for these two points must bond to the GameBoy for proper operation. If you have problems later when testing, reflow these two solder points.
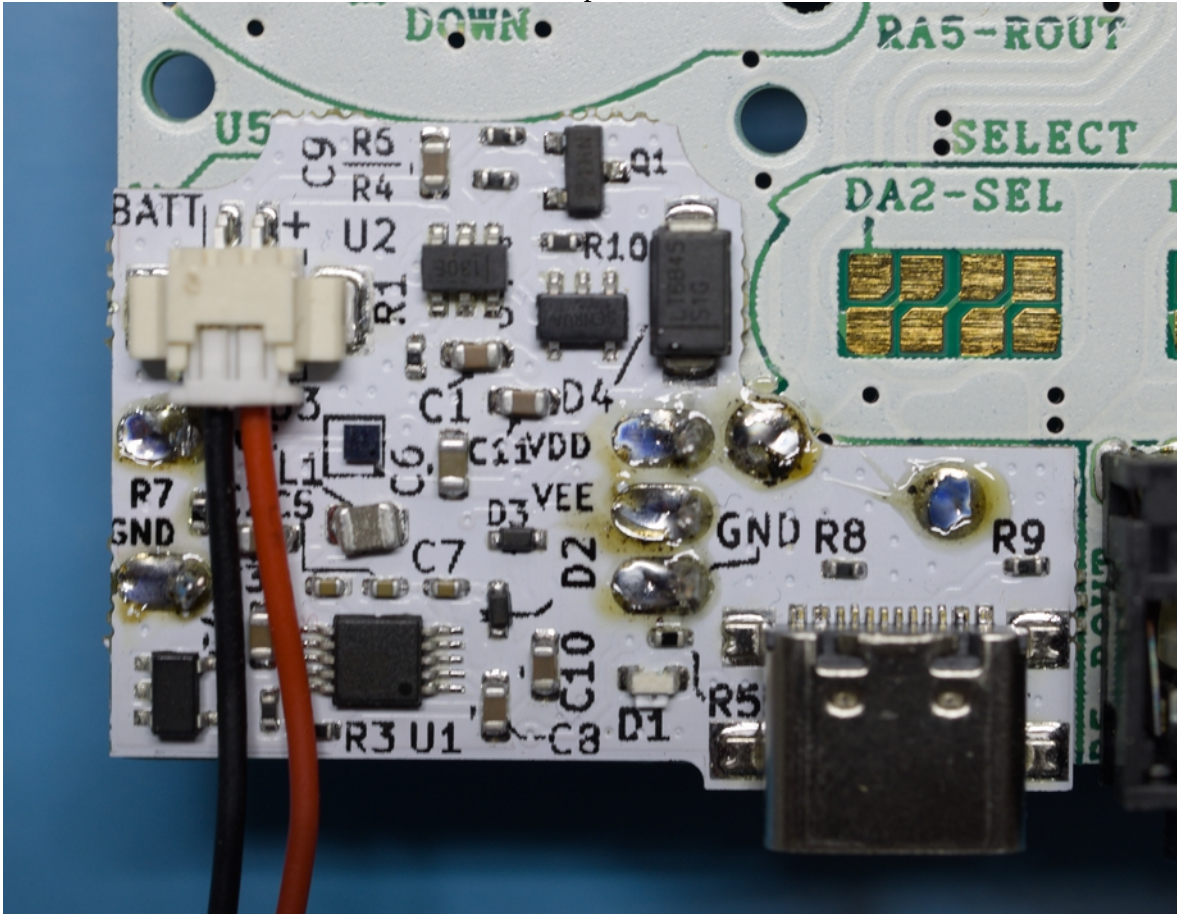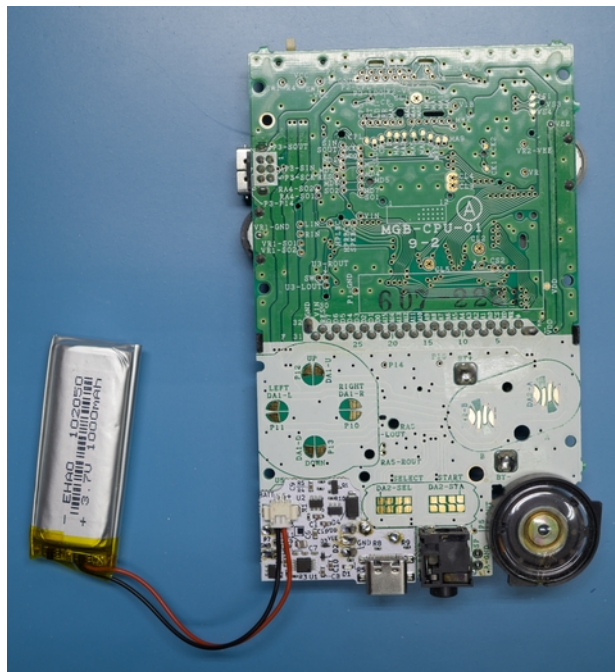
Step 9
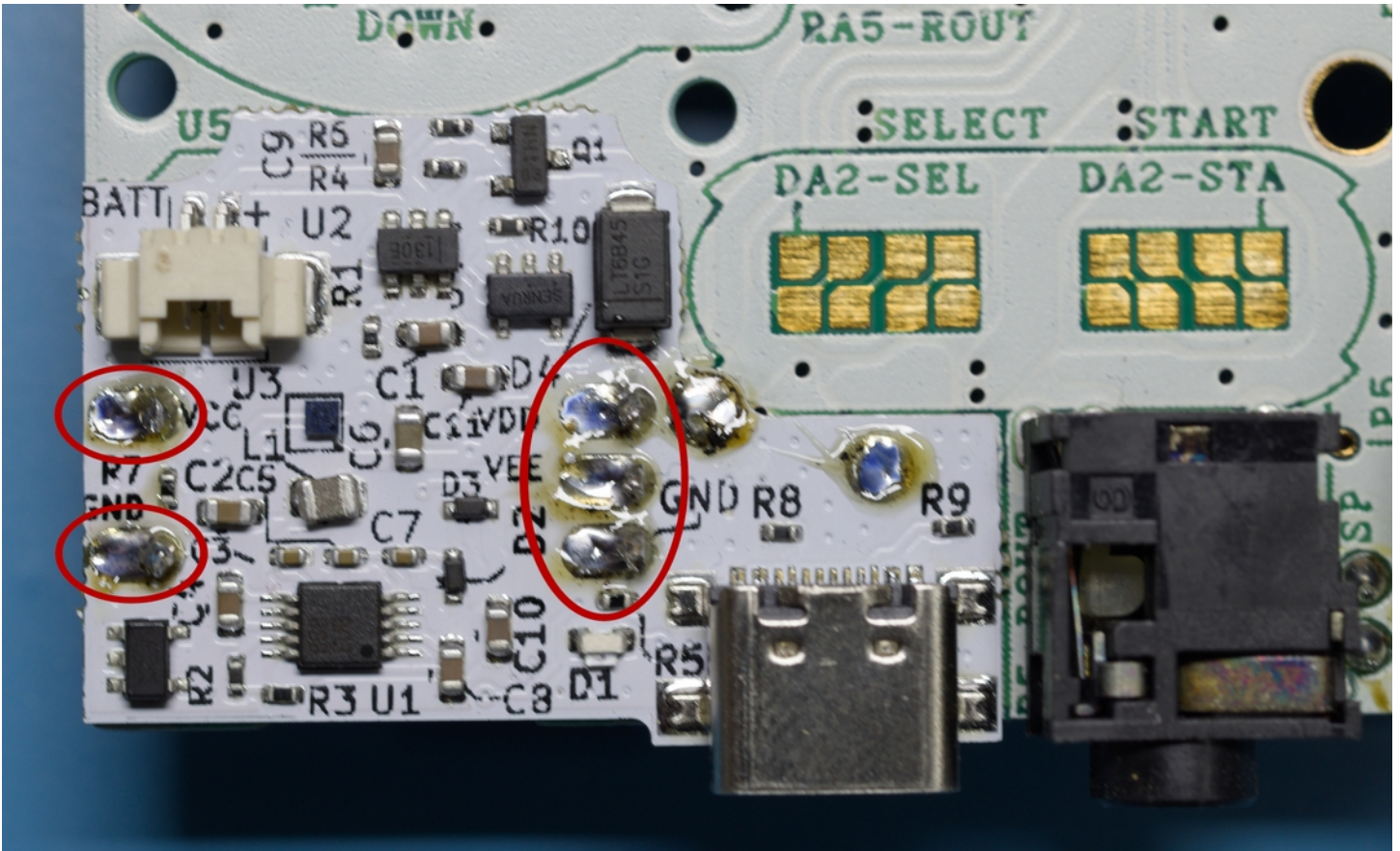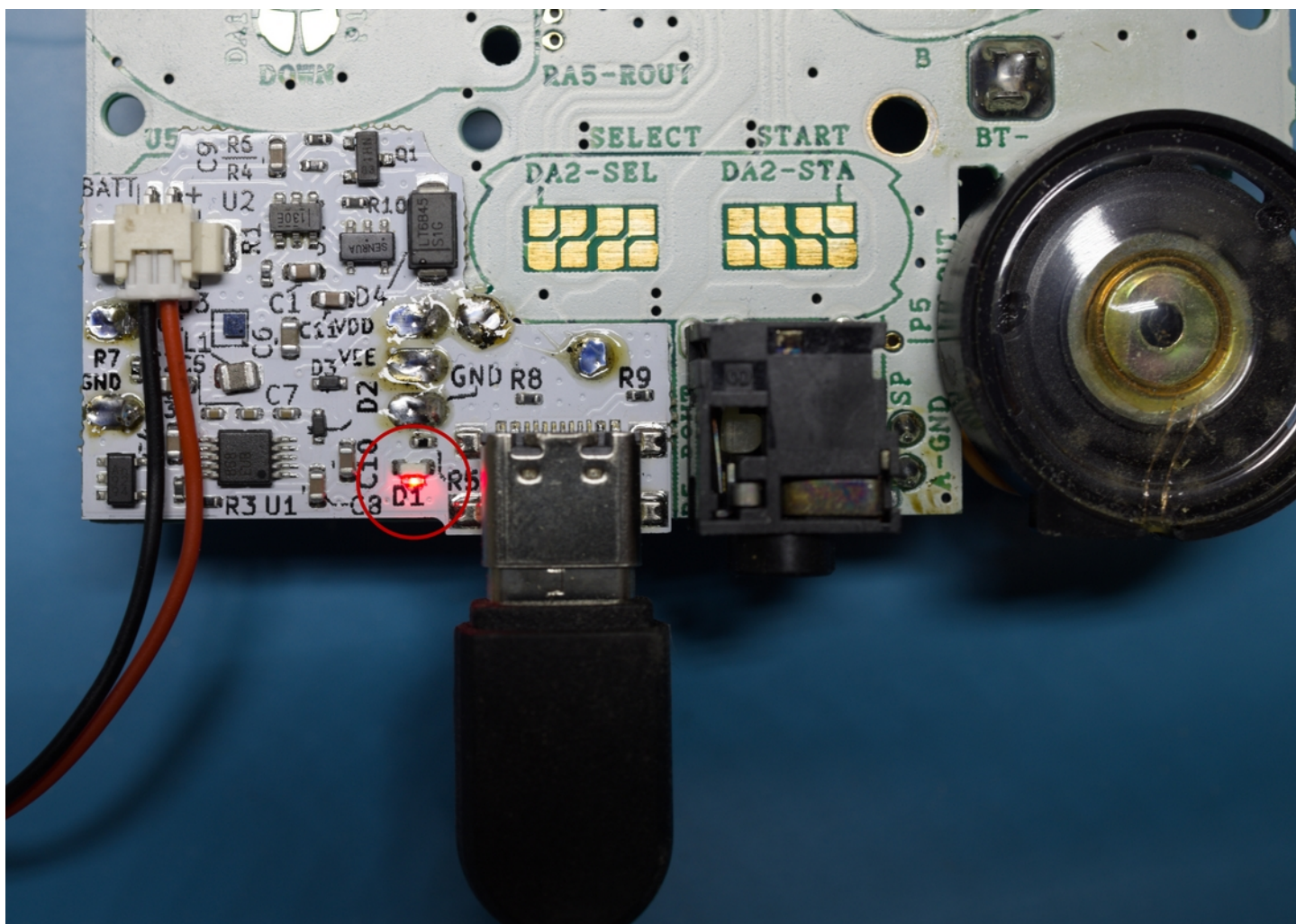


Solder the 5 points shown above.

Step 10



We can quickly test the mod to make sure it's functioning. Plug the battery in. Take note of the polarity of the battery shown above. The red wire goes to +

With the battery plugged in, plug in a USB C charging cable. The LED (labeled D1) should light up. This indicates that charging is functional.

Next, ensure the volume on the gameboy is all the way up, and turn on the GameBoy. If the mod was successful, you should hear the GameBoy start up sound. If the GameBoy buzzes, let the battery charge for a bit. This is more likely to happen with high current flash carts.
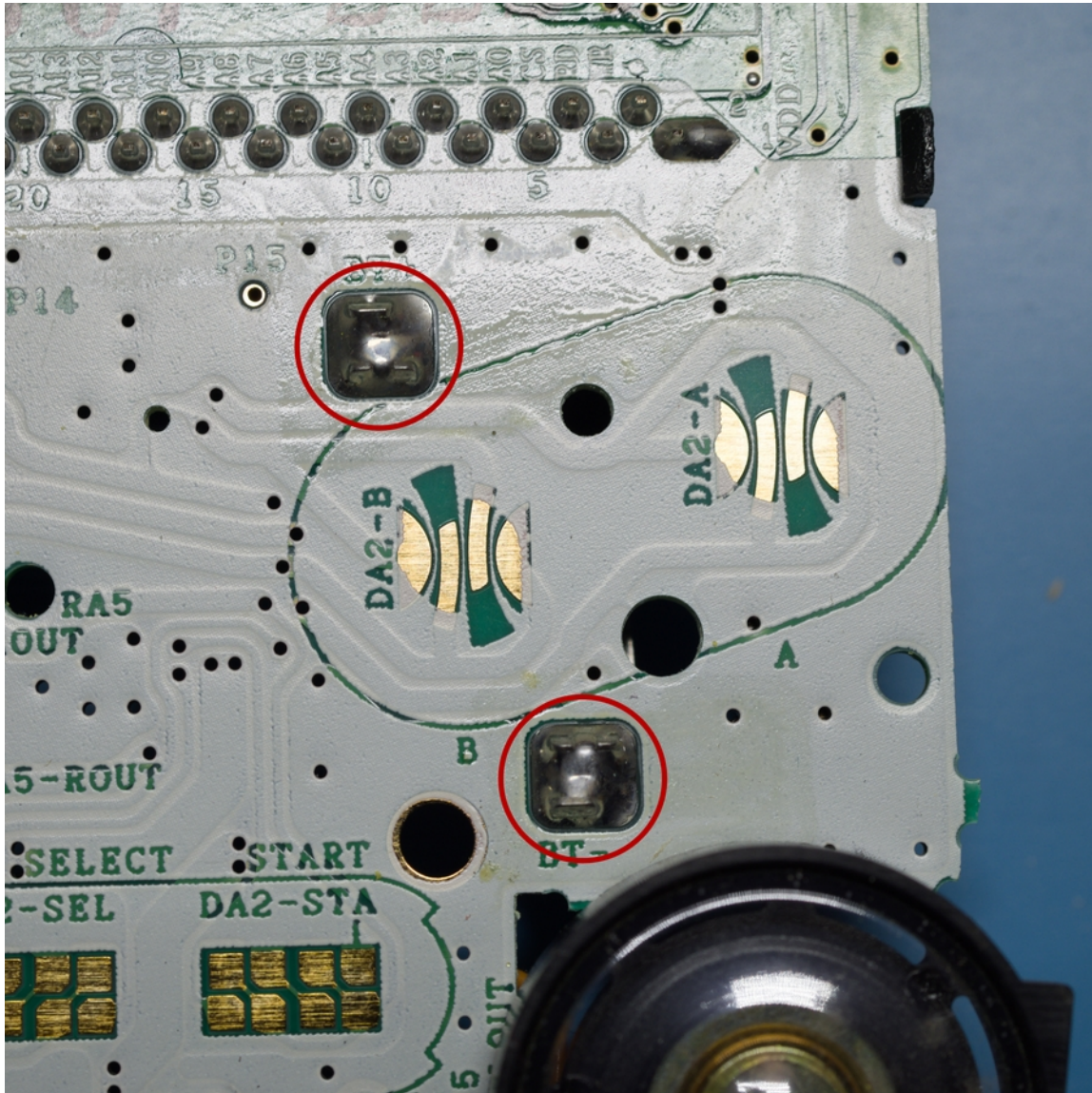
Turn off the GameBoy and unplug the USB C cable. Then, unplug the battery.

Step 11
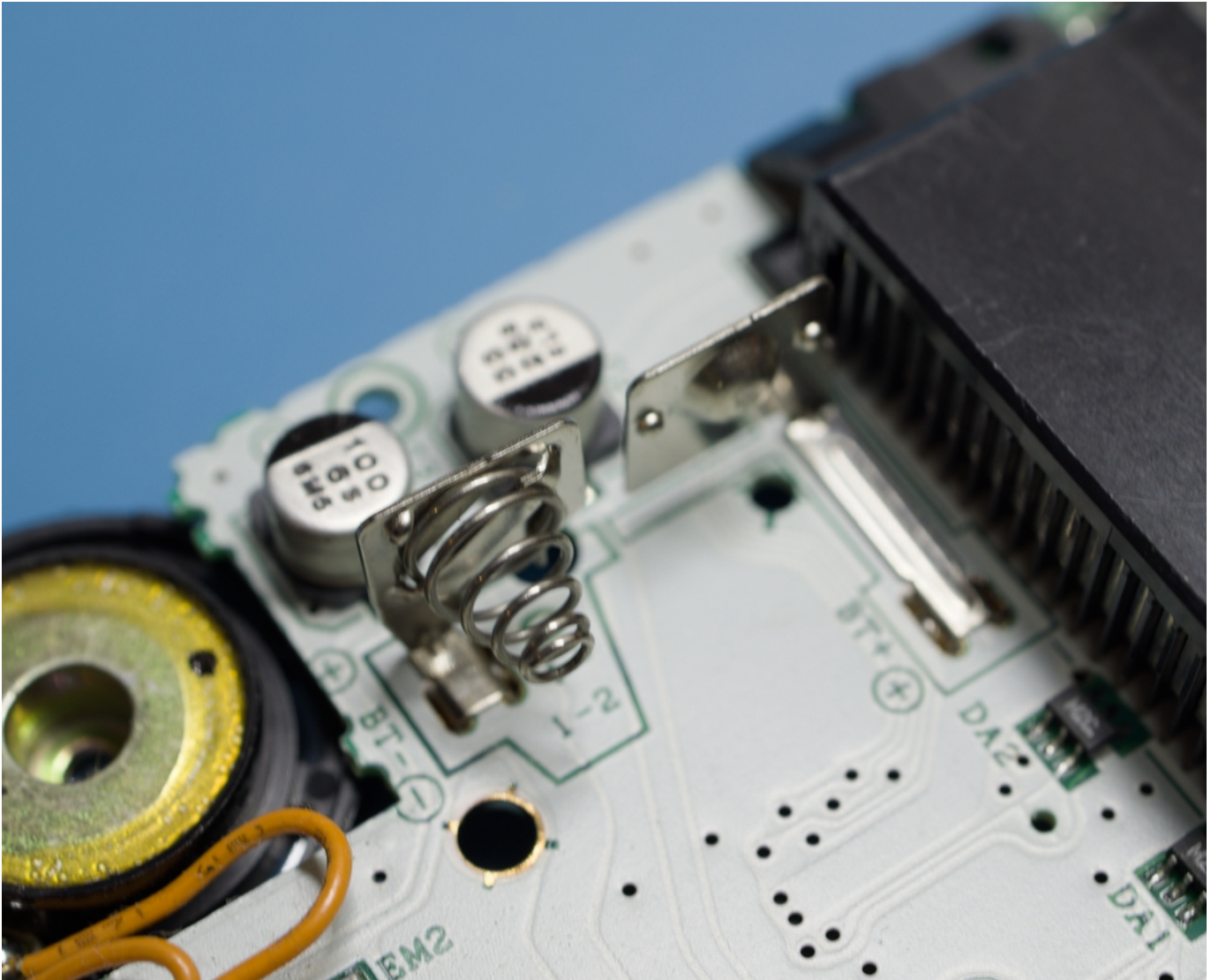


Now we need to remove the battery terminals. These must be desoldered, not cut. Cutting will leave sharp exposed metal which may damage the battery.

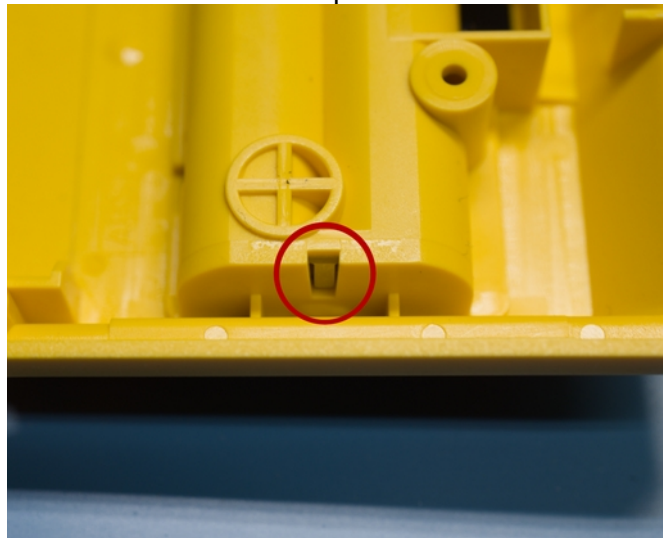Next to the A and B buttons, desolder the battery terminals at these two points.

Cutting the Shell.



We'll be cutting out the AAA battery location to make room for our lithium battery.

Step 12



Push the metal tab in. This will allow us to remove the battery terminal out of the shell.

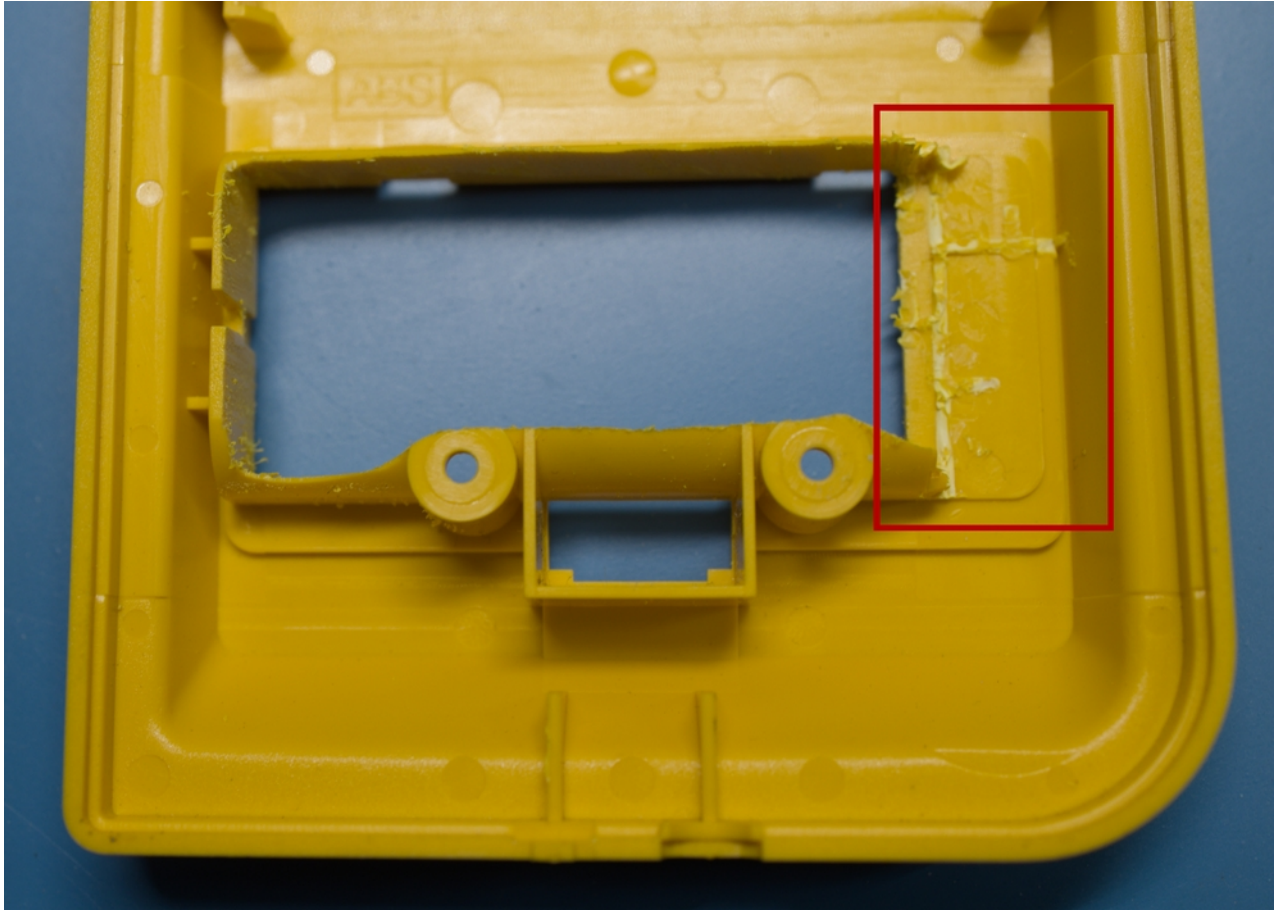Now with the battery terminal removed, we can cut the shell.

Step 13

Using the cutting tools of your choice, cut the area shown out. Be sure to leave the two screw holes intact.
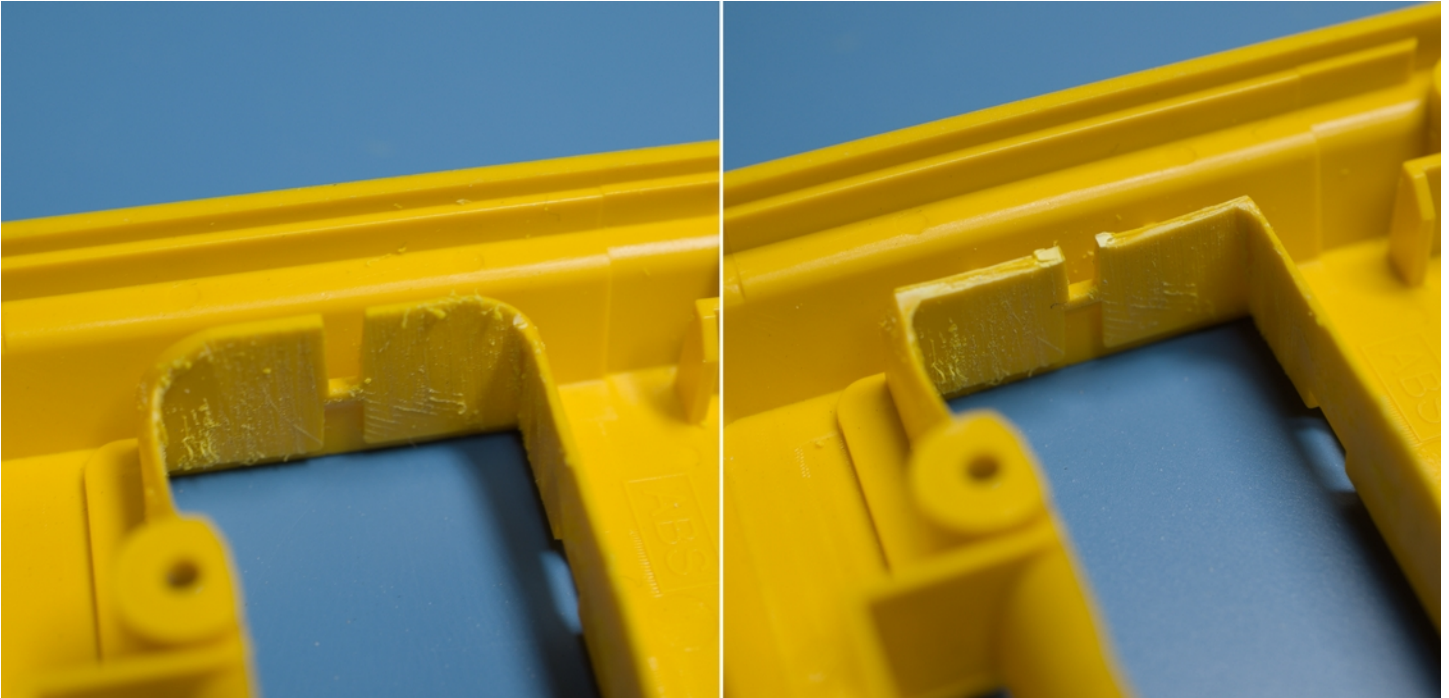
Step 14

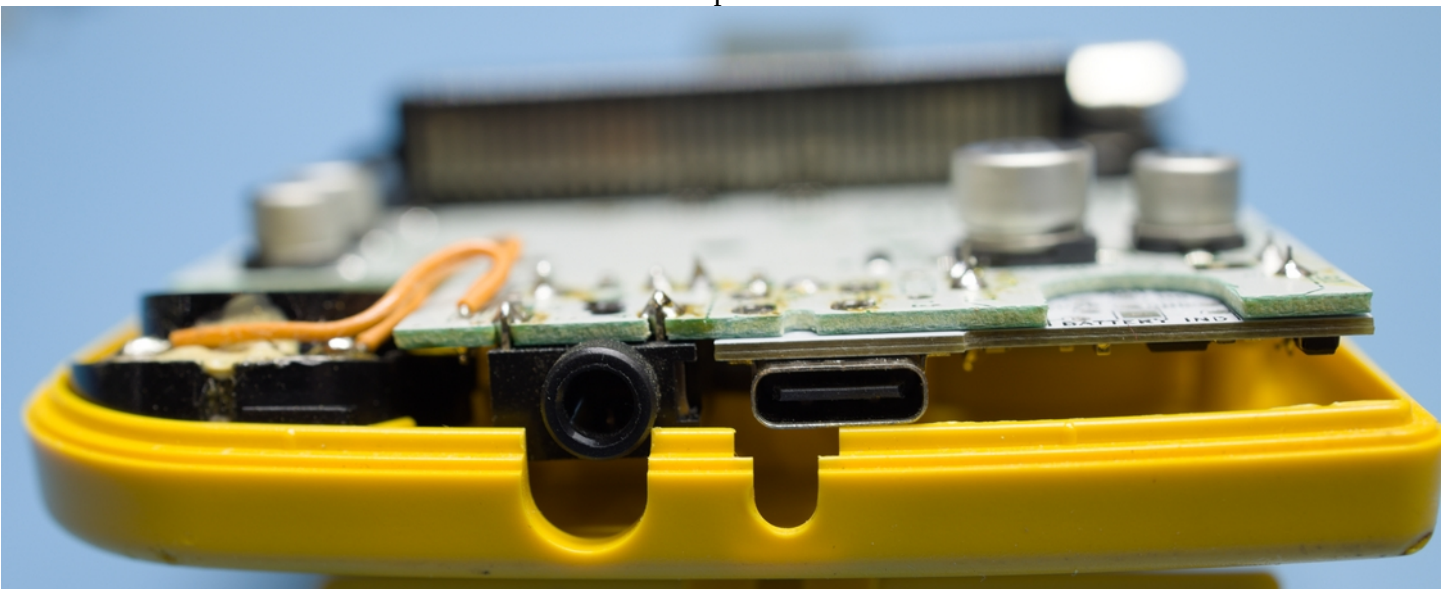Remove the plastic in the area highlighted above
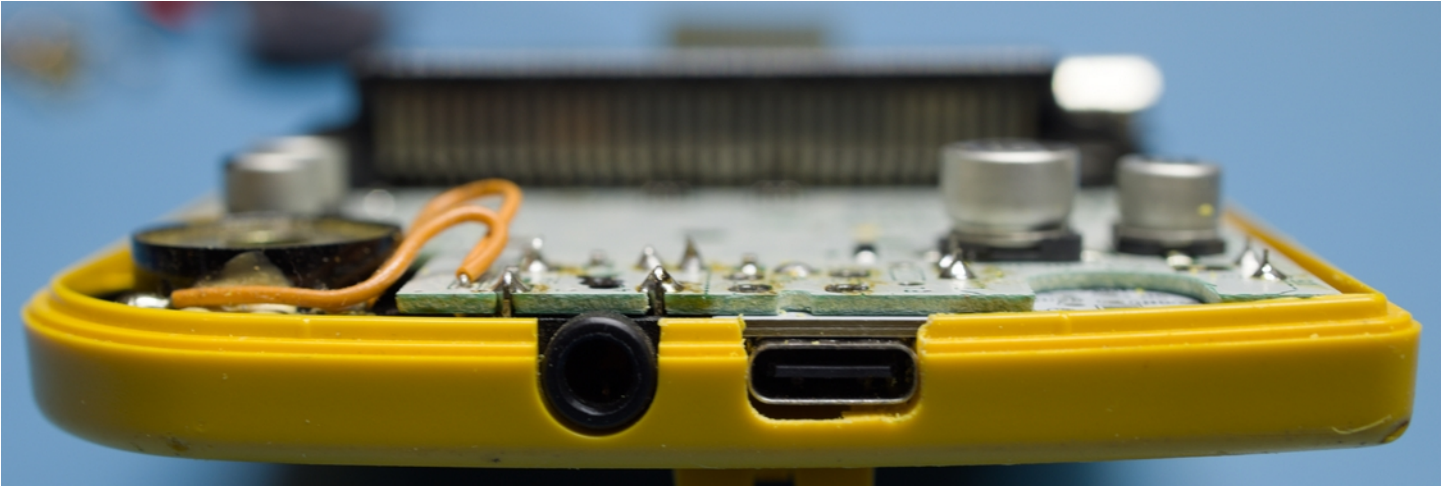
Step 15

Cut the plastic on the left down to the level shown on the right.

Step 16



Next we need to make space for the USB C port.

Remove plastic until the USB C port has room, and the GameBoy motherboard seats all the way in the shell
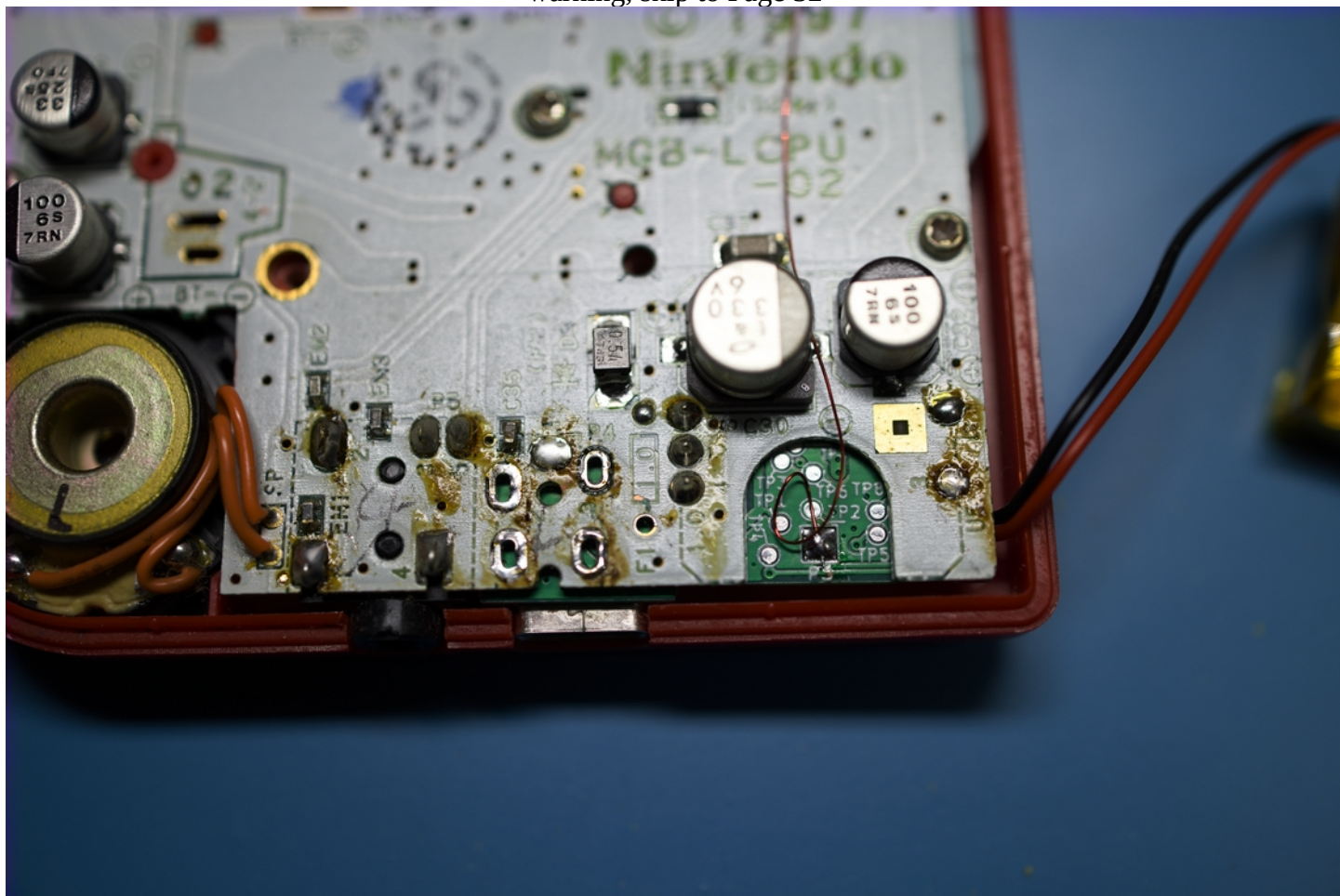
Step 17



Put the two halves of the shell together. There's a small nubbin that protrudes into the USB C port's area. File that so that it no longer interferes

Step 18
This step is optional. If your GameBoy doesn't have a power indicator, or if you don't care about a low battery warning, skip to Page 32



There is a square pad (labeled BATTERY_IND) on the back of the Pocket Power Pocket that's accessible from this round cutout.
Solder a fine wire to this. Keep the wire long as we will need to route it to the transistor that controls the power LED.  (note, an earlier revision of the Pocket Power Pocket is shown above. Your version will be properly labeled)
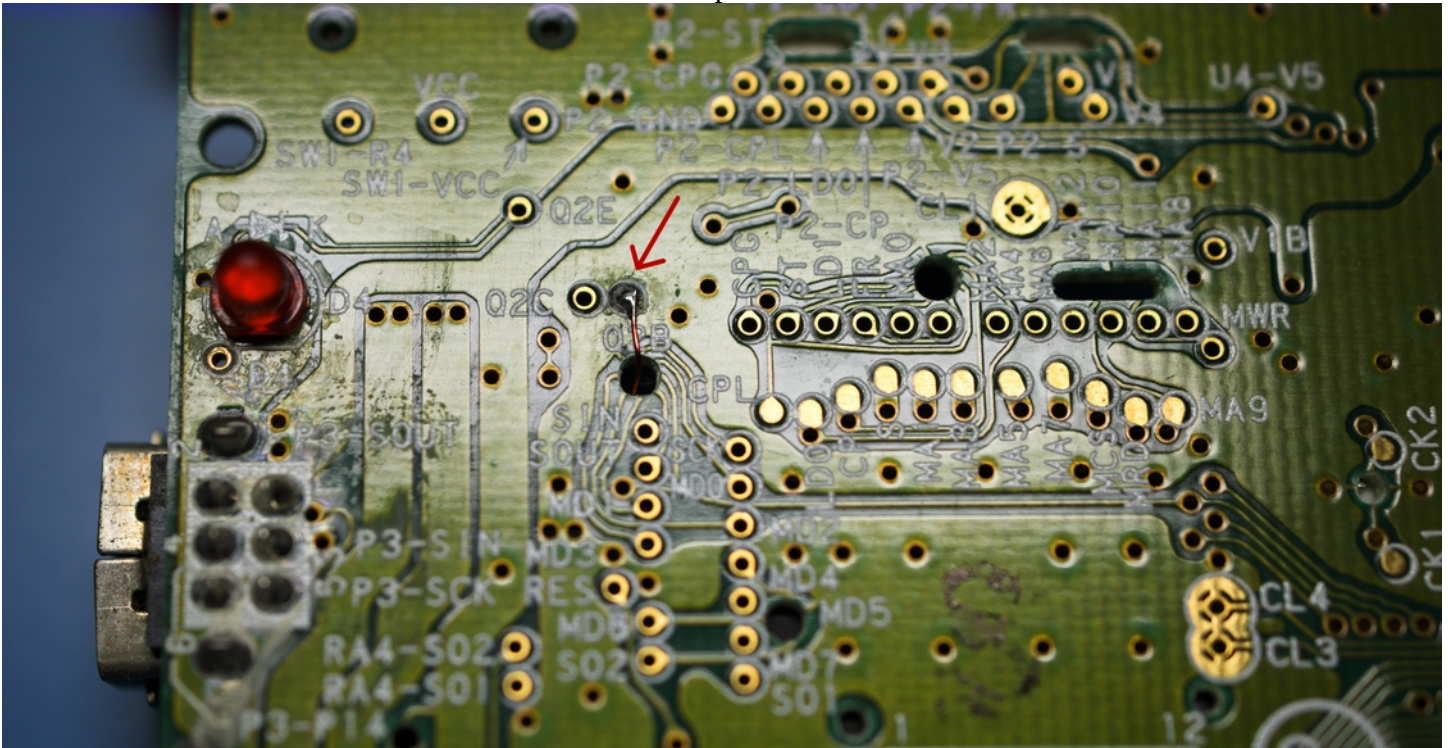
Step 19
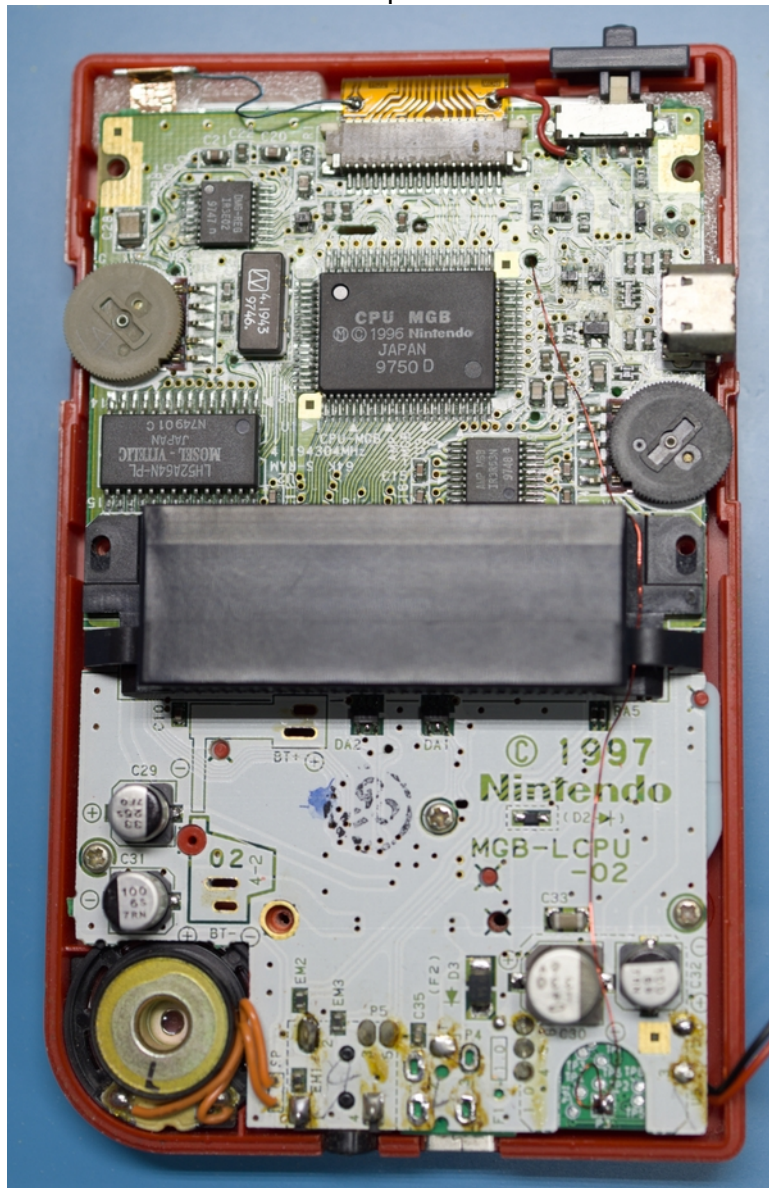


Route the wire against the board, around the cart slot, and into the hole that's above and left of the CPU
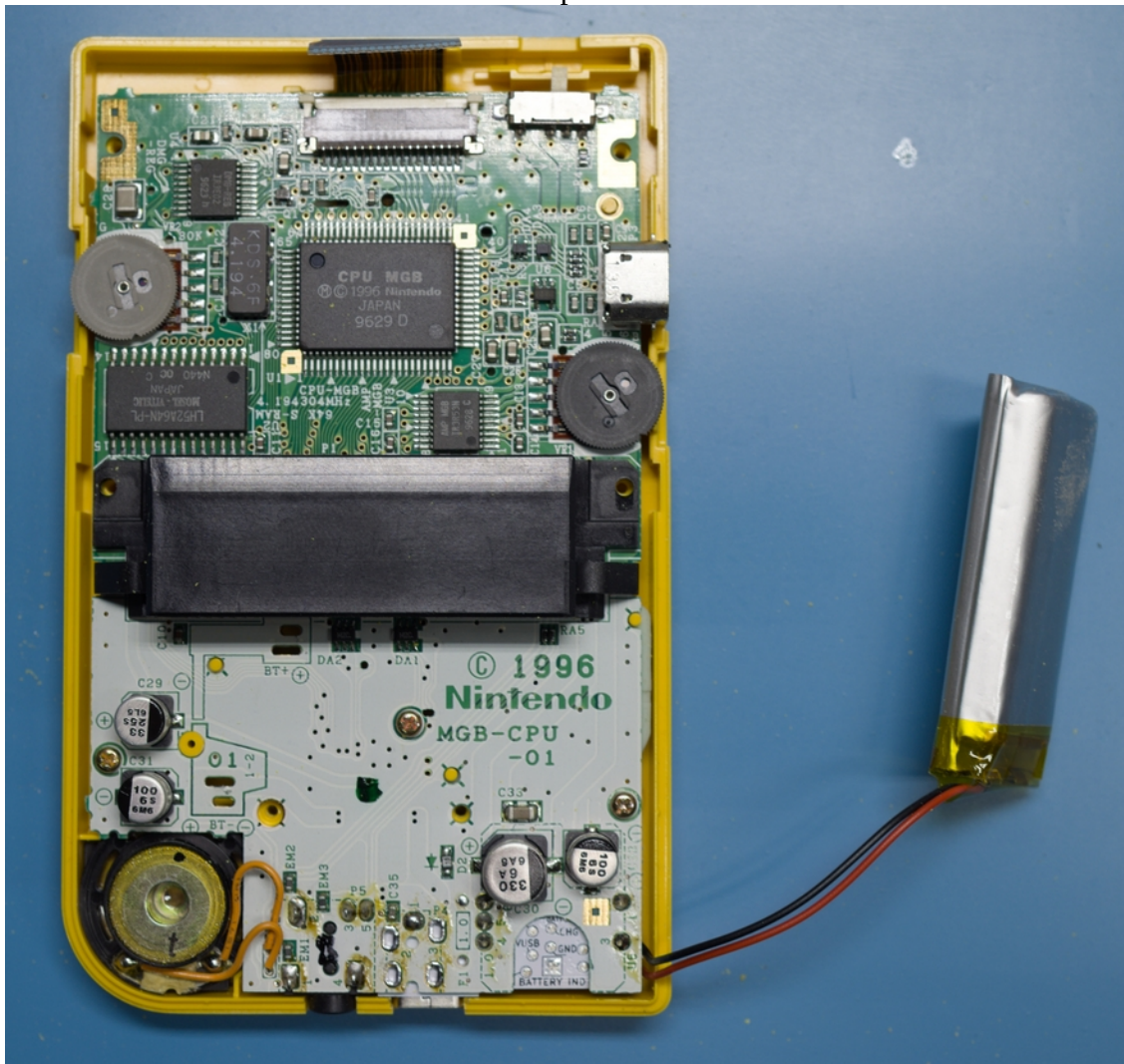
Step 20



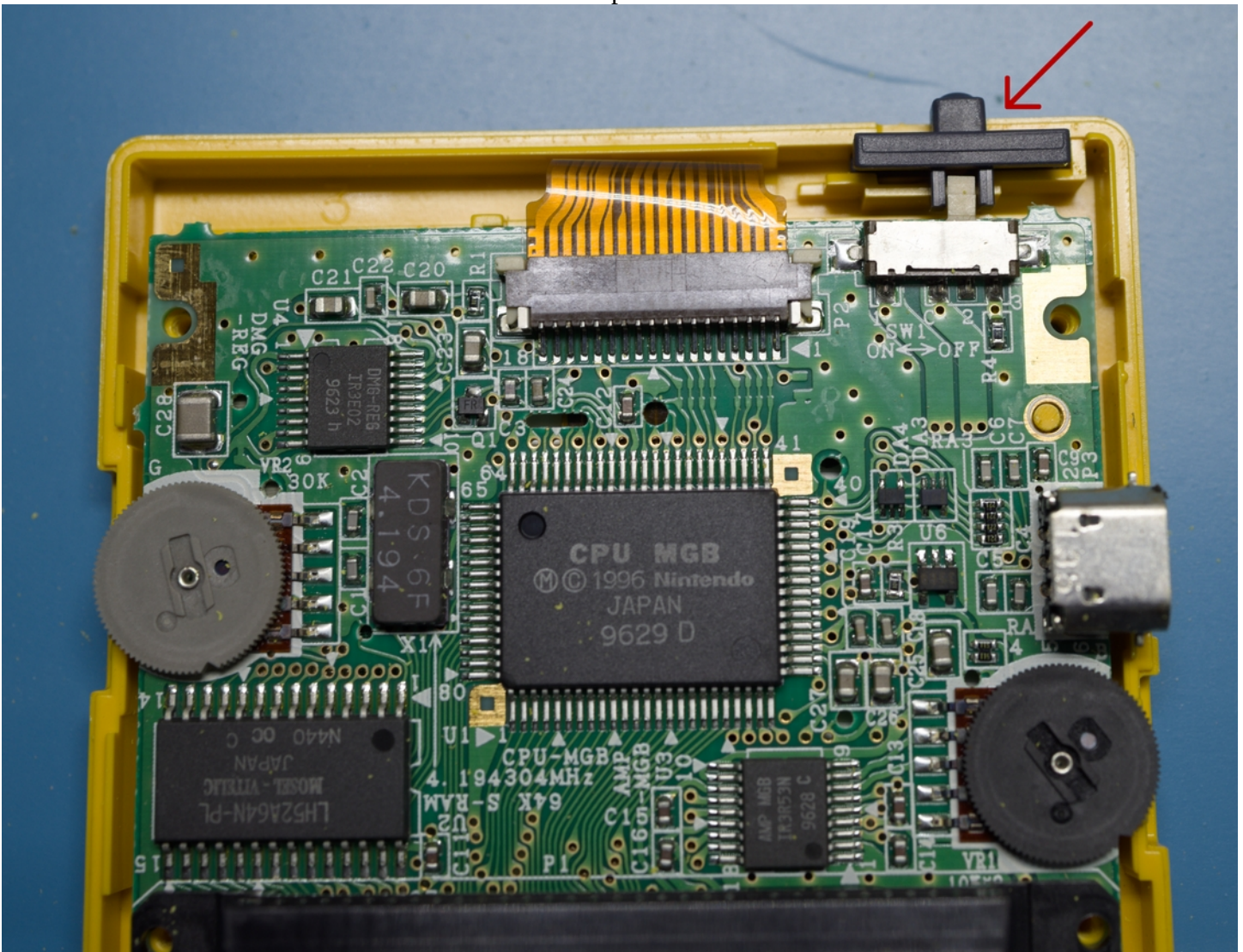There's a via labeled "Q2B." Solder the wire to that point.

Step 21



Plug in the battery.
Place the board in the front half of the shell while routing the battery off to the right as shown.
Insert 3 screws to hold the motherboard in place

step 22



Gently reinsert the display ribbon cable.
Don't forget the power switch plastic!

Step 23



place the rear of the shell on the front of the shell while routing the battery through as shown.
Install the 6 triwing screws.

Step 24



Tuck the battery into the battery compartment as shown. Replace the battery cover.

Finished!

Your GameBoy Pocket now has a Pocket Power Pocket battery installed! Even with a flash cartridge and IPS display, you can enjoy several hours of gameplay. Plus, the battery may be charged while playing as well.