

STBUUK DISPLAY REPAIR

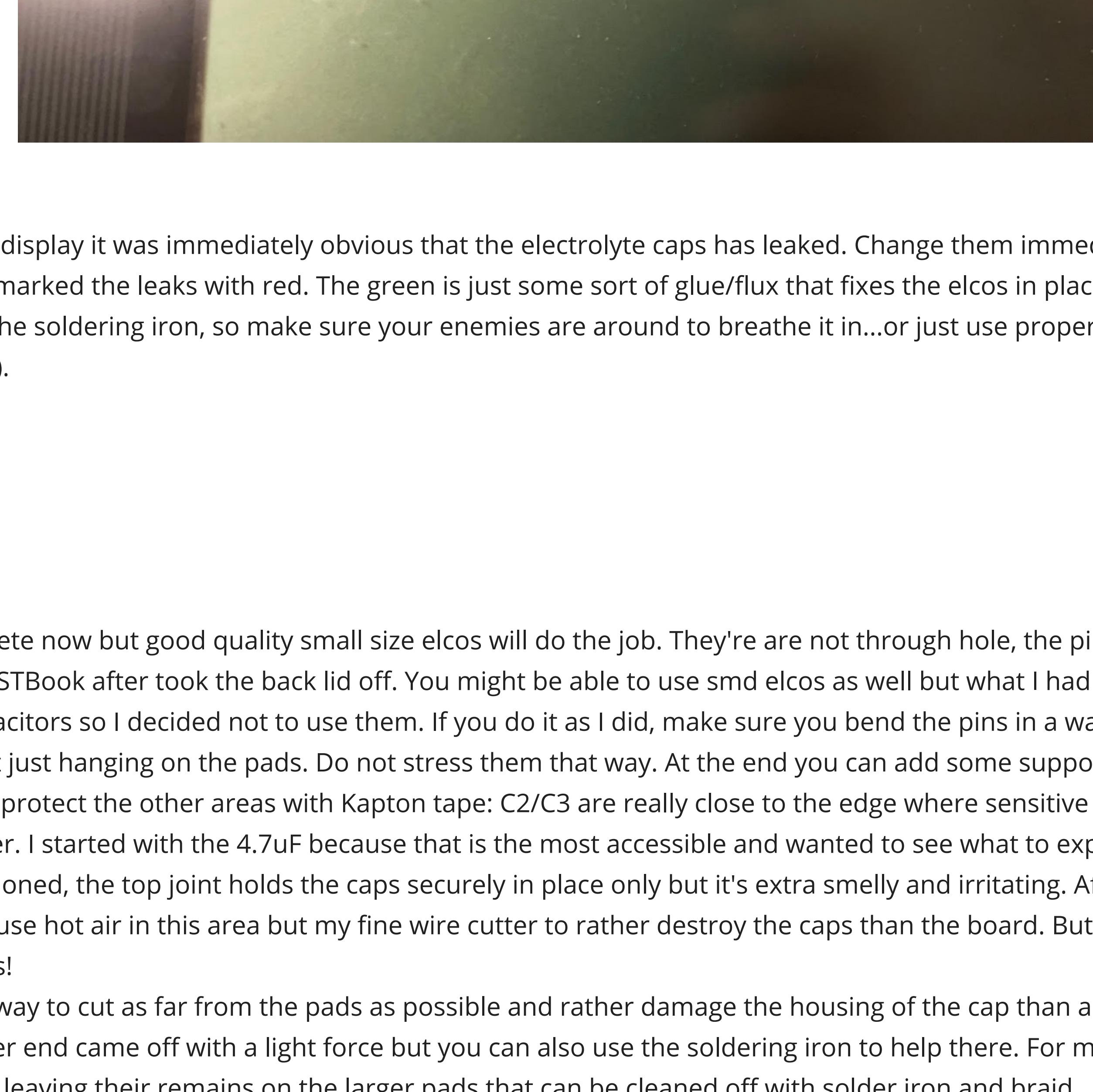
05/04/2021

I'm a lucky owner of Atari STBooks, however not all of them worked perfectly.

Problem: weak display with bars

This is my very good condition (almost stock) STBook, but had issues with the display. I had to change the Conner earlier to a CF-IDE adapter + card. There were weak areas and the pictured bars during boot. When it booted to desktop I couldn't set the contrast to a value where everything was 100% visible. I knew it's not the board that has issues, so let's check out the screen.

Weak screen



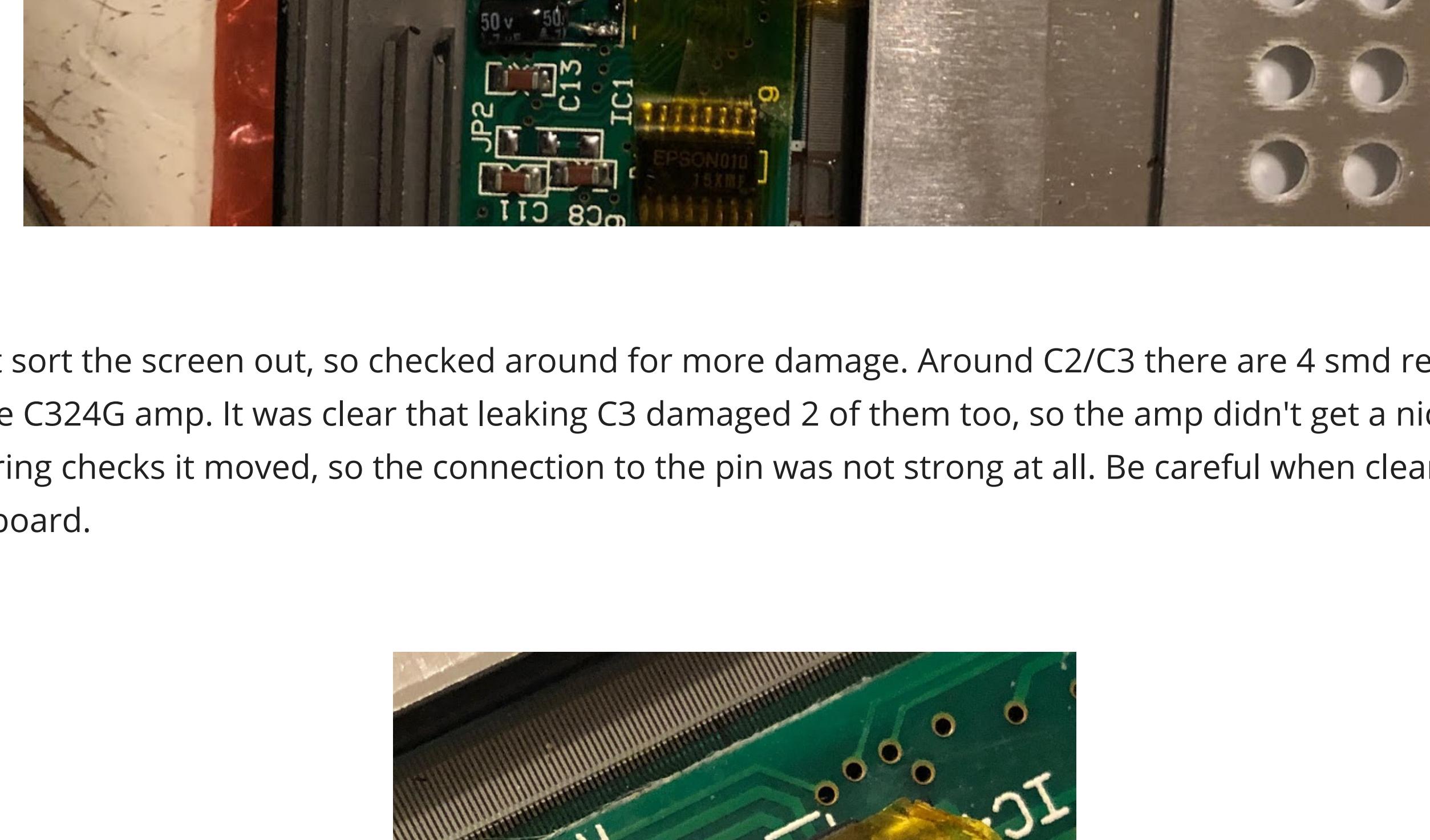
After opening up the display it was immediately obvious that the electrolyte caps has leaked. Change them immediately if you see that. In the photo below I marked the leaks with red. The green is just some sort of glue/flux that fixes the elcos in place (Disgusting stuff when you hit it with the soldering iron, so make sure your enemies are around to breathe it in...or just use proper ventilation when cleaning that part up).

You need:

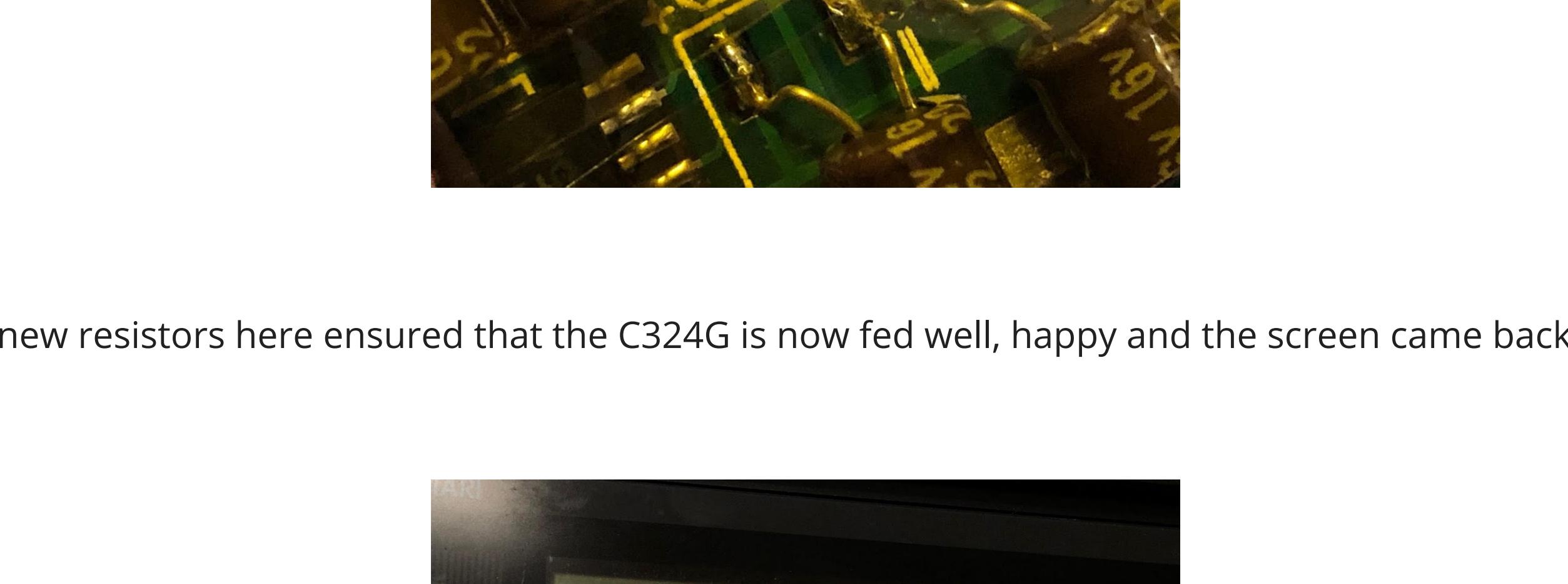
- 22uF/16V - x4
- 10uF/16V - x1
- 4.7uF/50V - x1

These caps are obsolete now but good quality small size elcos will do the job. They're are not through hole, the pins are bent this way so you can work on the STBook after took the back lid off. You might be able to use smd elcos as well but what I had around were taller than the original capacitors so I decided not to use them. If you do it as I did, make sure you bend the pins in a way that the body rests on the board and not just hanging on the pads. Do not stress them that way. At the end you can add some support as well (some tape or glue). Make sure you protect the other areas with Kapton tape: C2/C3 are really close to the edge where sensitive lines are, so overdue it rather than sorry after. I started with the 4.7uF because that is the most accessible and wanted to see what to expect when working on the others. As I mentioned, the top joint holds the caps securely in place only but it's extra smelly and irritating. After few tries with the iron I decided not to use hot air in this area but my fine wire cutter to rather destroy the caps than the board. But still have to be careful not to stress the pads!

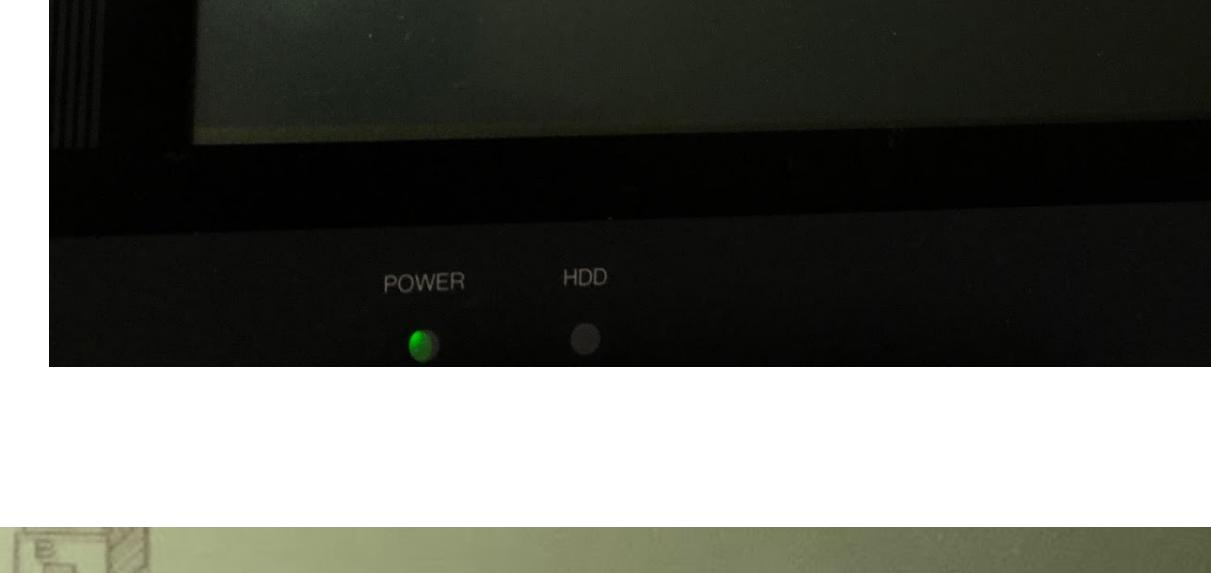
I held the cutter in a way to cut as far from the pads as possible and rather damage the housing of the cap than anything else. After cutting them the other end came off with a light force but you can also use the soldering iron to help there. For me they came off without problem just leaving their remains on the larger pads that can be cleaned off with solder iron and braid.



This is the photo after recap.



However recap didn't sort the screen out, so checked around for more damage. Around C2/C3 there are 4 smd resistors (4.7ohm) that feed the signals to the C324G amp. It was clear that leaking C3 damaged 2 of them too, so the amp didn't get a nice clean signal. This photo shows that during checks it moved, so the connection to the pin was not strong at all. Be careful when cleaning up corrosion. You are here to save the board.



Cleaning and adding new resistors here ensured that the C324G is now fed well, happy and the screen came back to its full "brightness".

