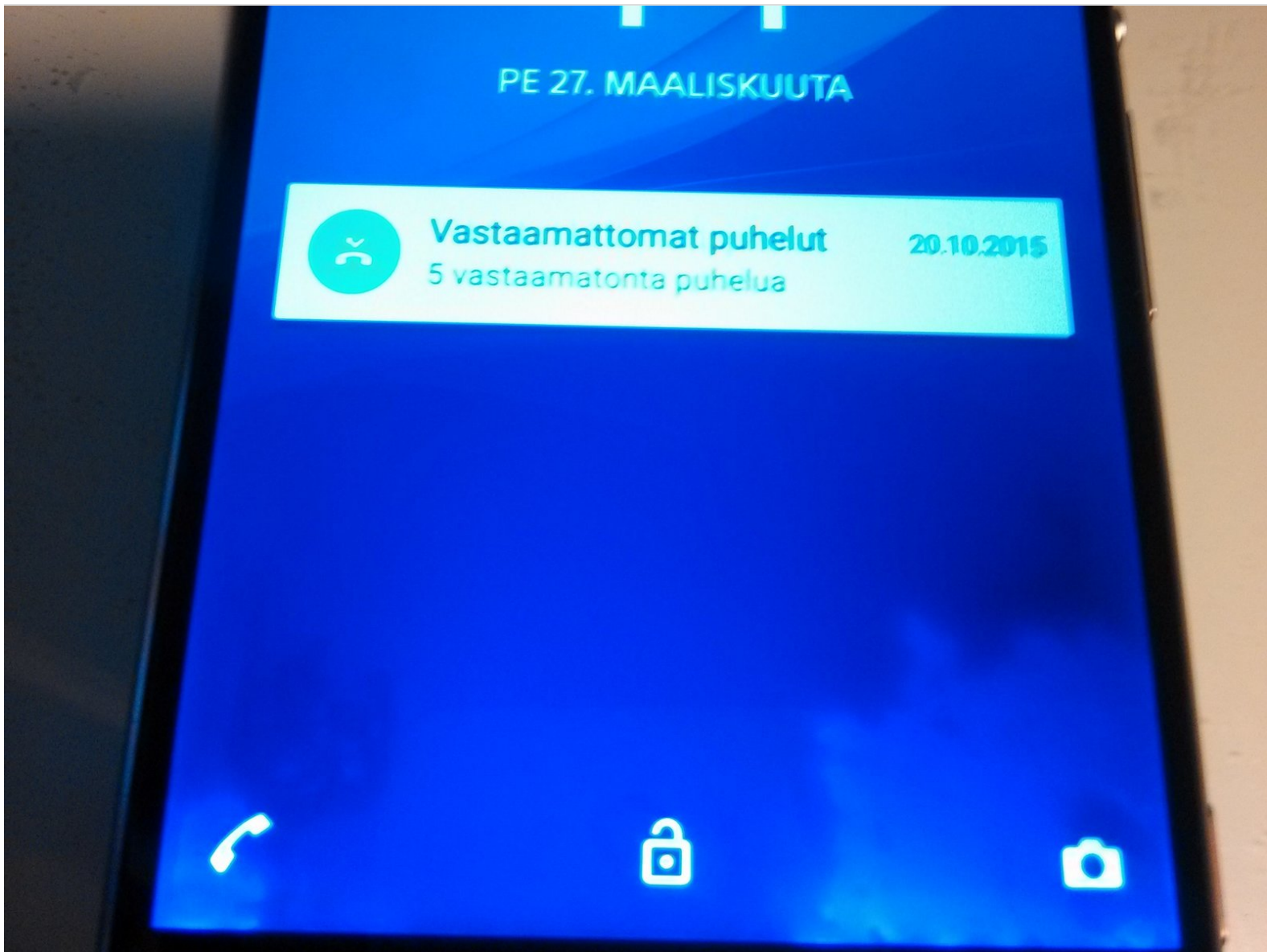




How to clean LOCA from between the LCD screen layers (Sony Xperia Z3)

I'm just showing a teardown of sorts for the Z3 LCD screen that was flooded by LOCA. After disassembling the screen and wiping the layers clean, the screen looked pretty good, but not completely clean as opposed to a new screen.

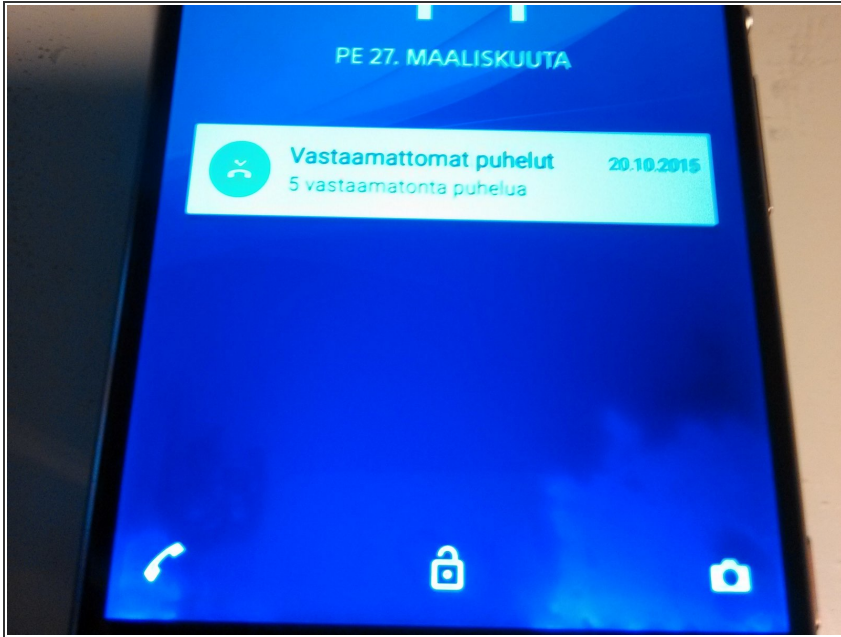
Written By: Antti Immonen



INTRODUCTION

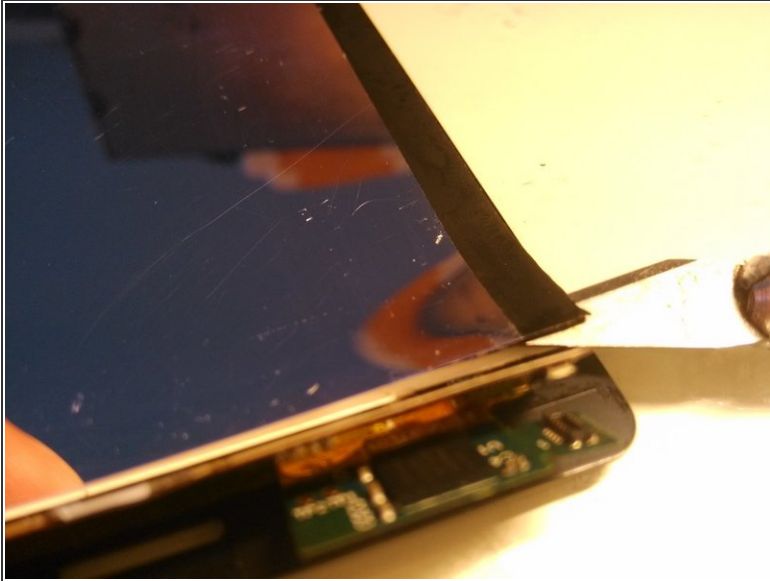
On the contrary to the popular beliefs, there's not really anything special about taking apart LCD screens. You just need to make sure you can put the layers back in in the correct order, and to be able to leave as little traces and dirt in between them. For some screens you have to desolder the backlight, which might sound intimidating to some, but isn't too difficult either, with a bit of microsoldering experience.

Step 1 — When to repair



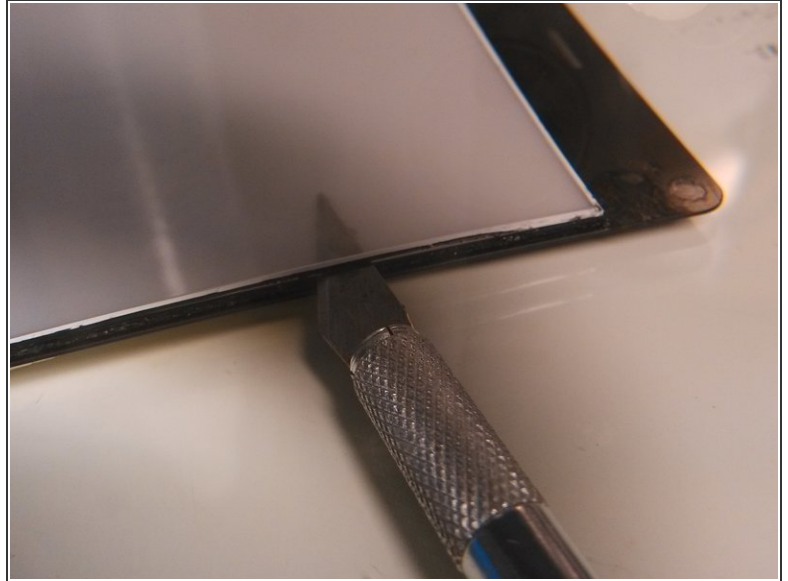
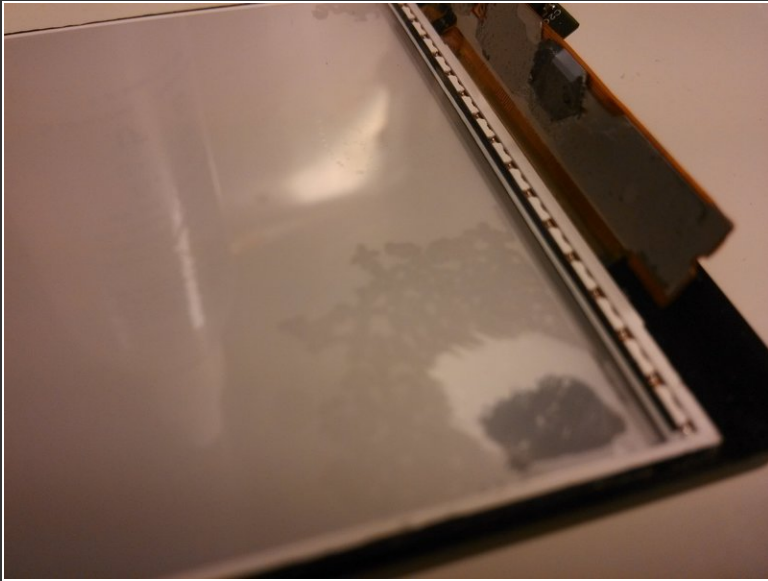
- If your screen is flooded by LOCA, and a new one costs more than you're willing to pay without trying to fix the old one, then this is the guide for you. This screen for Z3 cost around 30\$ at the time of attempting this repair.

Step 2



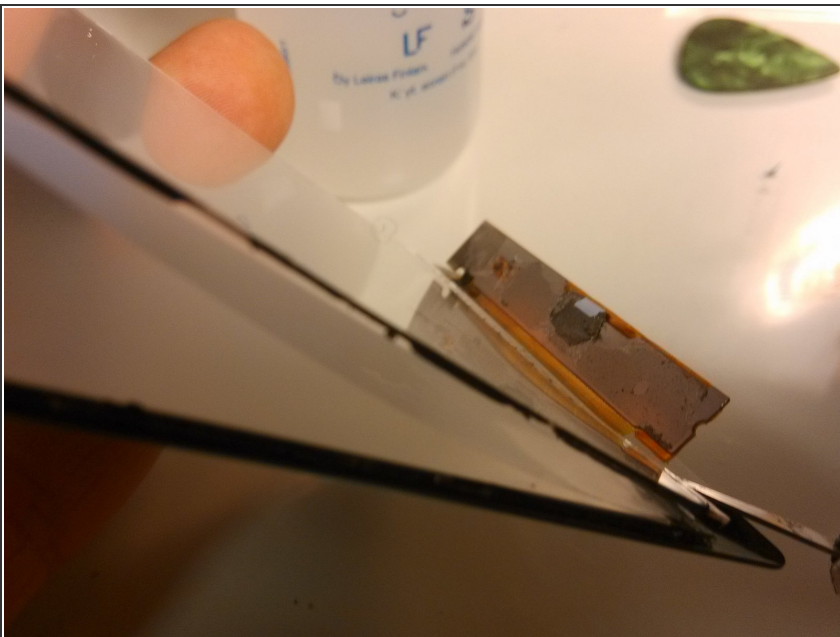
- The first layer to remove is the rear mirror of the LCD. There is usually mild adhesive or very very thin double-sided tape holding it in place.
- To start, take your exacto knife and optionally place pieces of thin tape on either side of the blade to dull the edges a little bit, but leave the sharp edge unobstructed. This way you can effortlessly cut through the adhesive but don't scratch the layers of the screen with the sides of your blade.
- ⚠ Pay close attention to the cutting process of the adhesive, and move slowly, to avoid slashing the rear mirror layer, which is very thin.
- After peeling open the rear mirror film, you see the first splatters of LOCA. Wipe them off with alcohol and a lint-free cloth, and you can then assess the situation again: if there is more glue in between the next layers, you will have to continue.

Step 3



- As you can see, for me, there was LOCA in between pretty much every single layer. Just keep slashing the side adhesives open with the exacto knife (gently) and move the layers in a logical order to the side, keeping them as clean as you can. Avoid getting finger grease on them.

Step 4



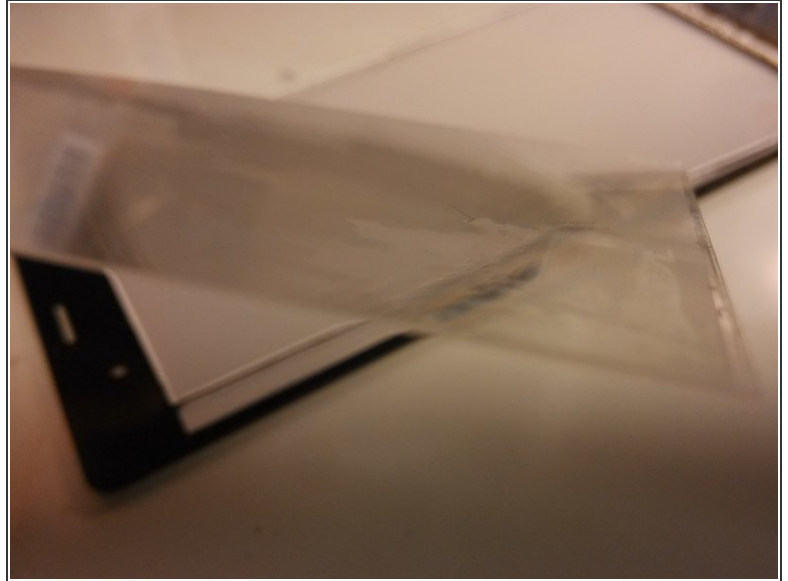
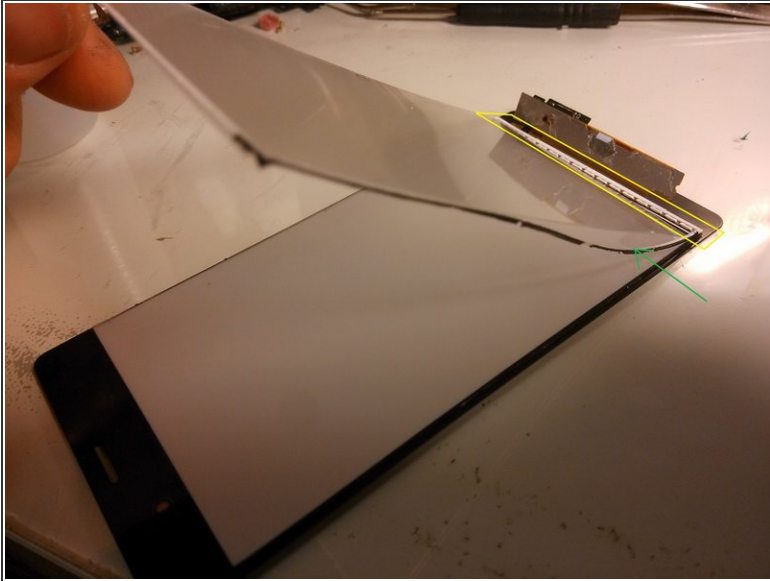
- As you remove the layers, mind the LCD flex cable, as it is very fragile, and your knife can slip through it very easily, rendering the whole screen totally worthless.

Step 5



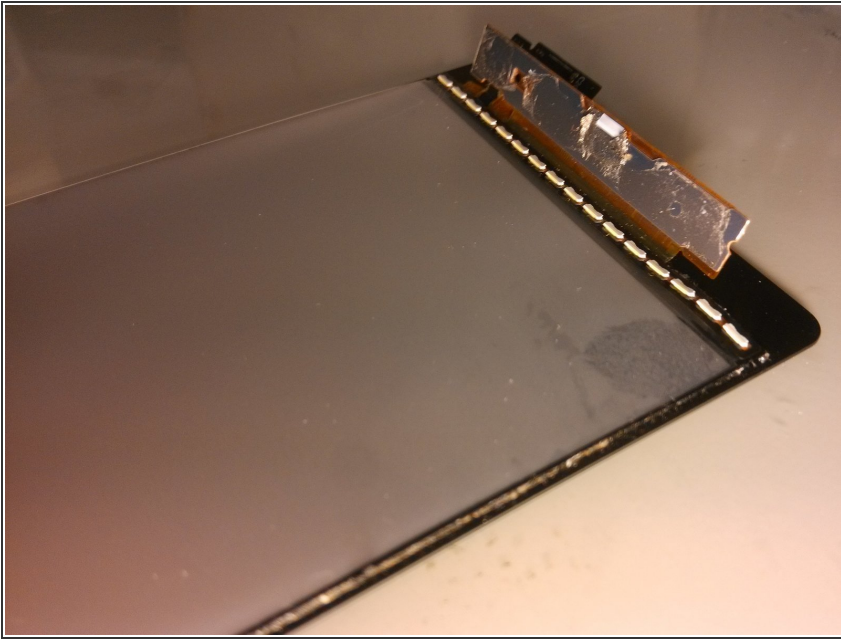
- This is one of the polarizing layers. In the picture circled in red you can see why using a playing card or a tape-covered blade might be a good idea. The scratches didn't show really at all in the end, though.

Step 6



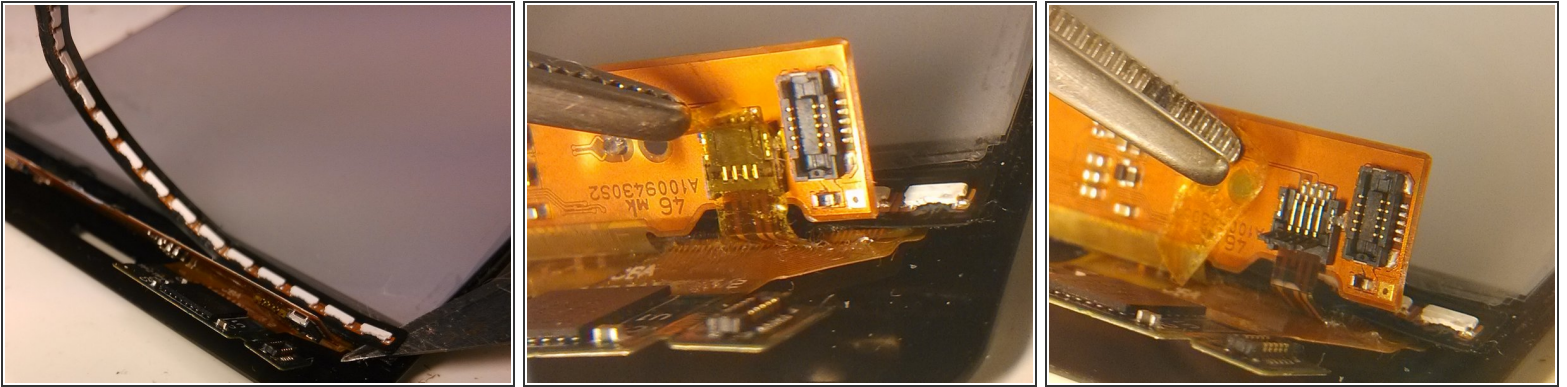
- This is the layer that ensures the even, planar spreading of the backlight around the LCD.
- The backlight is emitted from the strip of LED's that all seem to have around 3volts voltage drop across each LED. In total the backlight LED strip requires around 16volts, supplied through a three-pin connector by a some sort of switching power source.
- Apparently, there are two separate ground rails and a common Vcc, each operating half of the LED strip. These are possibly connected in parallel.
- To see LOCA stains clearly, you need to be looking at the pieces from the correct angle (second picture).

Step 7 — The backlight strip



- Eventually you will end up with the string of LEDs that are the backlight at the top. They are only glued into place with mild adhesive and can be removed quite easily. Just avoid cutting into the backlight strip.
- ⓘ If you do ruin the LED strip, you will at least be able to salvage some fairly bright but energy efficient SMD LEDs for future tinkering.
- ★ In this picture you can also see how much dust there actually can be on the layers. Always blow a bit of pressured air at the parts when reassembling

Step 8 — Stripping off the backlight strip



- Just slowly edge your exacto knife through under the backlight strip to remove it.
- ⚠ Avoid cutting the backlight cable. If you do accidentally cut it, and know some basics about microsoldering, you could consider repairing it using [this](#) guide.
- Proceed to unplug the backlight to remove it. In some cases the backlight flex is soldered onto the LCD flex, but can be desoldered and later reattached with relative ease. Or you can just leave the backlight flex be, it might not need to be removed to successfully clean the remaining LCD layers.

To reassemble your device, follow these instructions in reverse order. An alternative to cleaning all layers is replacing some layers from defective screens, as cleverly pointed out in the comments.