



# Samsung Freeform 4 Liquid Damage Repair

Here is how you can attempt to repair liquid damage in this phone.

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## INTRODUCTION

You will be taught how to repair liquid damage on this phone. The chance of it restoring to perfect operation is slim, with some keys probably not working. Remember to immediately turn your phone off if wet, and remove the battery. This is best done as soon as the phone gets wet, to prevent corrosion. Having a jar full of silica jell is also good.



### TOOLS:

- [Phillips #00 Screwdriver](#) (1)
  - [Cotton Swabs](#) (1)
  - [High Content Rubbing Alcohol](#) (1)
  - [iFixit Opening Tools](#) (1)
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## Step 1 — Samsung Freeform 4 Liquid Damage Repair



- Here lies your phone, ready to be taken apart.

## Step 2



- Remove the battery by taking off the rear cover, and popping the battery out..
- When you have a liquid damaged phone, the most important thing you do is remove the battery. If the phone is still on, **don't bother powering off like normal**. Just remove the rear panel and take the battery off, as its quicker and safer.

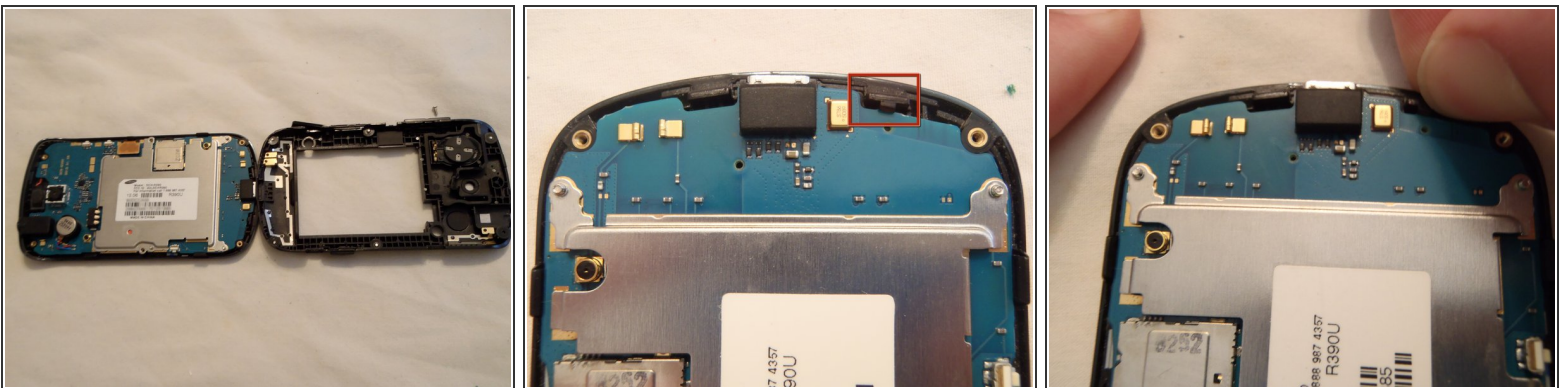


### Step 3



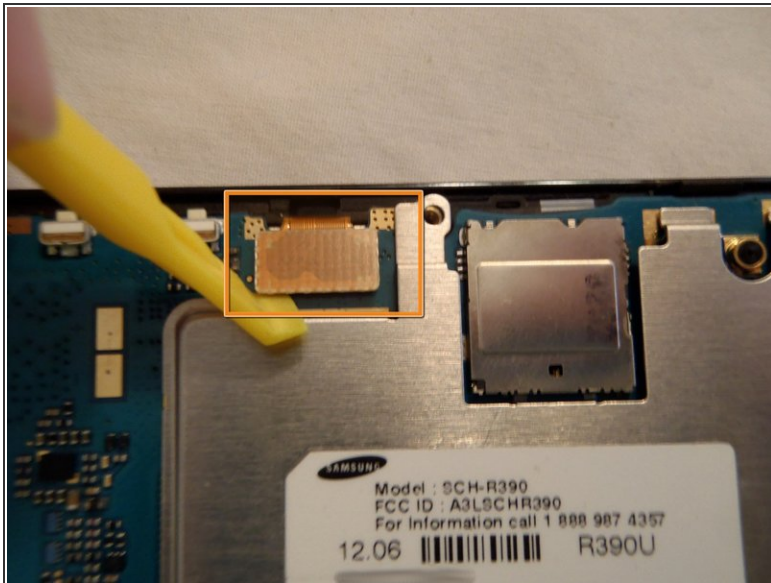
- Use a small philips screwdriver and remove all six screws. The screws will not come out of the bezel, but some may accidentally fall out.
- Use a prying tool to reach in and separate the bezel from the chrome housing. Go all the way around the edge doing this, just popping the bezel up. Once you get it, just lift it away.
- Notice the red Liquid Damage Indicator. They are white when the phone is normal (dry). Depending on how much water they see, they can turn pink to red.

### Step 4



- Now to begin removing the motherboard. First, take the clip highlighted in red and pull it towards the bottom of the phone. As you do this, lift the motherboard upwards.
- ⚠ Don't lift the motherboard up farther than the top of the clip! There is still a flex cable connected!

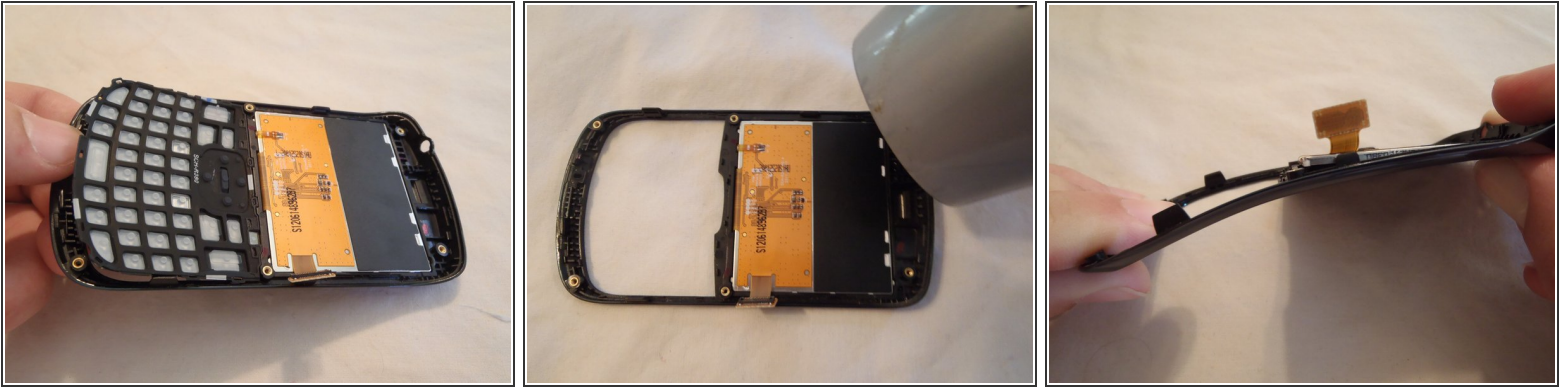
## Step 5



- Take your spudger or opening tool and flip the flex connector up.
- Lift the motherboard up and away.



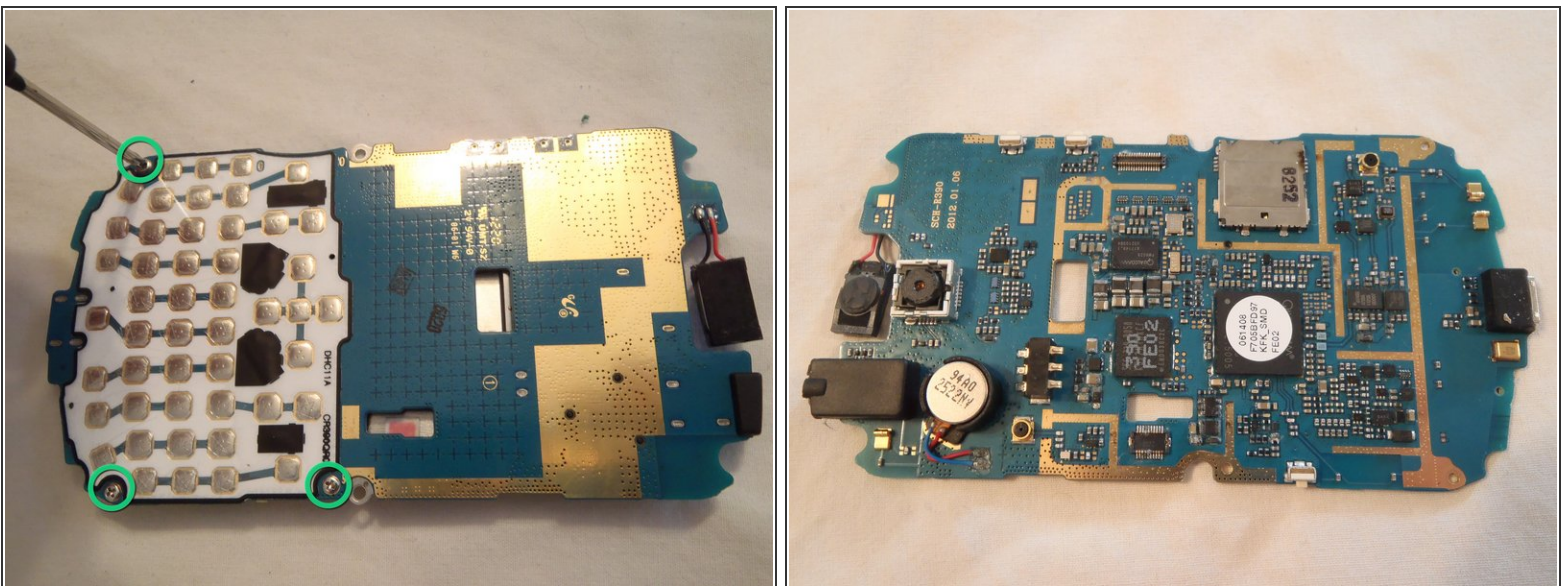
## Step 6



- Now turn to the front panel that has the keypad and the LCD.
- The keypad just lifts right out.
- The LCD has adhesive all along the edge of the it. This attaches it to the frame. Get a hairdryer and put it on the high setting. Go around the border of the LCD for about sixty seconds total. Then bend the frame slightly downwards while holding the top, and lift the LCD out.

⚠ Hairdryers can get hot, so be careful please.

## Step 7



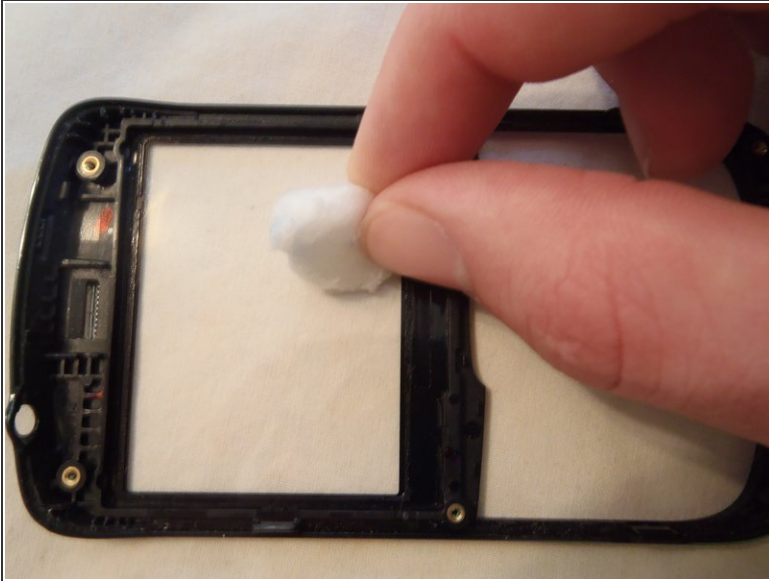
- Use your screwdriver to take out the three screws here. The rear shield will then come off.

## Step 8



- Here begins the cleaning! You will need the highest concentration Isopropyl Alcohol (Rubbing Alcohol) you can get. Don't settle with anything less than 90%. Why? Well, if it isn't rubbing alcohol, then it's water. Water is conductive and can hurt your phone. Rubbing alcohol will remove corrosion and will not hurt your phone.
- Scan the phone for any water or corrosion. We will later use the rubbing alcohol to 1) Displace the water. 2) Remove the corrosion.

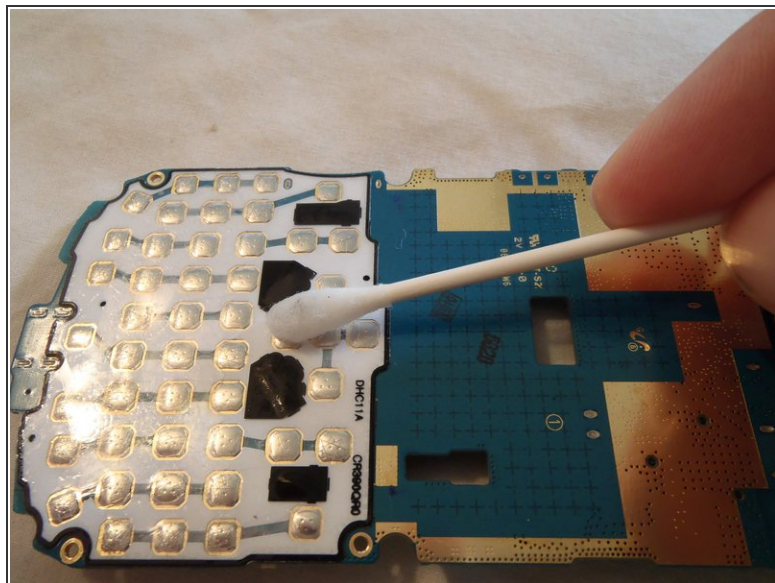
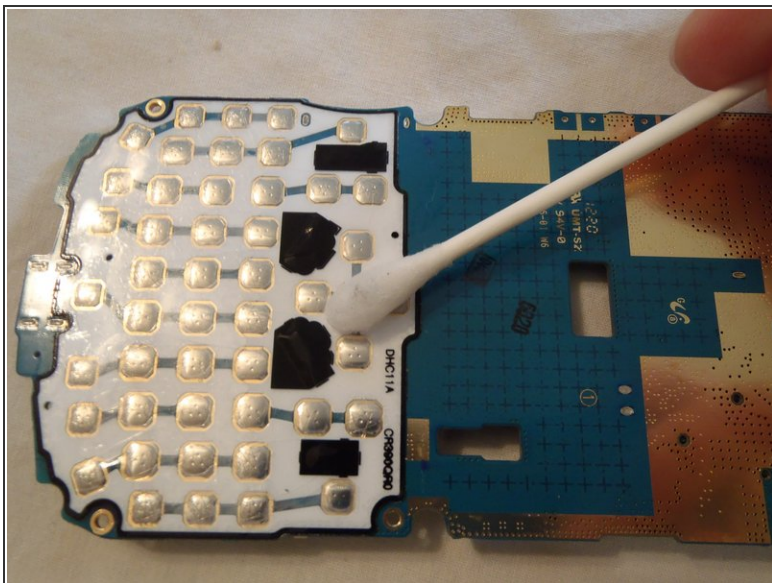
## Step 9



- My phone took a trip through the washing machine. Due to this, there was soap underneath the plastic and LCD screen. Take a cotton ball or swab (your pick, but only for this step!) and clean down the plastic and keypad.
- If you really want to, just rinse that keypad off in water. There is nothing on it to short out, as its just plastic/rubber. Don't submerge it in rubbing alcohol or else the print may wear off.

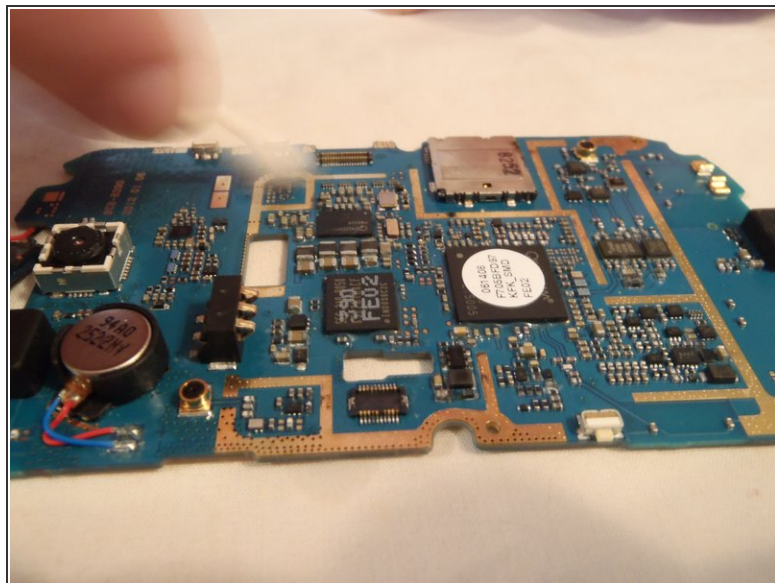
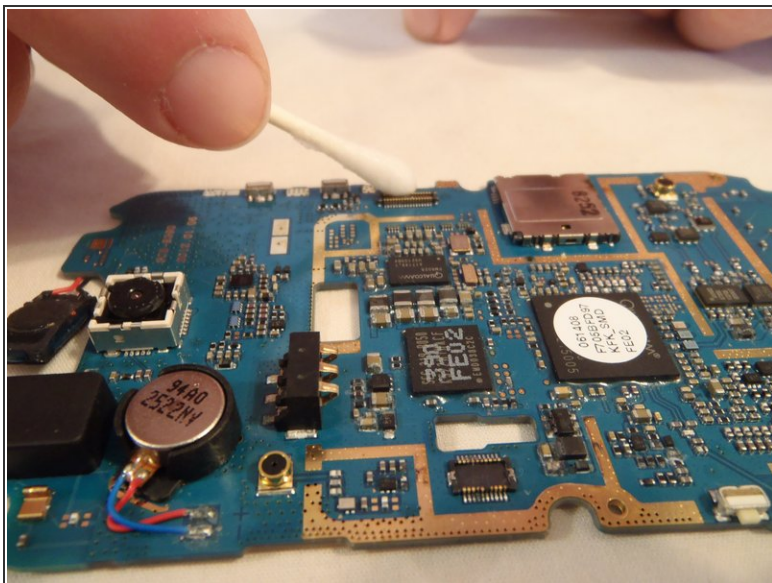


## Step 10



- Water was stuck in between the plastic coating on the keypad and the actual solder joints. This would cause the keys to act erratically as it bridges electrical connections.
- Here, I tried to use a cotton swab to push that water out. This did not work...

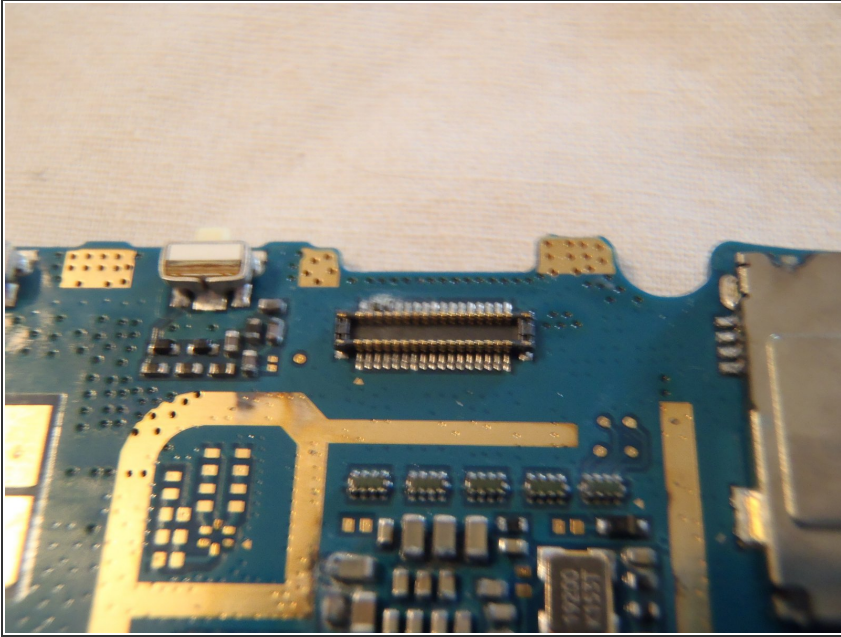
## Step 11



⚠ These are pictures of what not to do.

- Using a IPA (Rubbing Alcohol) cotton swab was to clean any corrosion off and displace any water. I ended up getting little pieces of cotton all over little pieces of phone. Turns out, I had to pick all the little stuff off to get it clean.

## Step 12



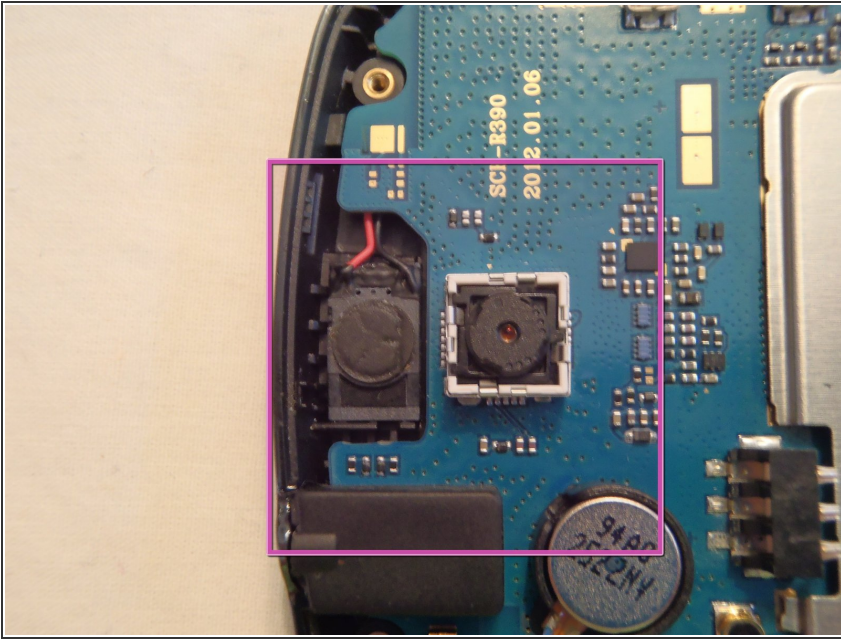
**i** The REAL solution to ridding the phone of water is to get a vertical container, and submerge the motherboard up to the vibrator motor in IPA. Take the motherboard out and make it so you can access the sides. Use an anti-static cleaning brush to clean the corrosion off the motherboard.

**!** Don't go past the vibrator motor! The camera has filters and such inside of it, that if the IPA gets to it, it will eat them apart. Then you will have no camera.

- These flex connections are places to watch out for corrosion. Make sure to get over them, but don't scrub harder on them.



## Step 13



- Don't let the IPA get up into here.
- It may take several baths to clean all the corrosion. Once you think you want to try it again, put the motherboard out on a paper towel and let it dry for at least 24 hours.
- If you want a higher chance at success, get a jar and fill it a good way with silica packets, leaving room for the motherboard. Make sure no IPA is on the motherboard when you do this. Have it sit in the can for a minimum of 48 hours. I left it in for a week, or until the liquid from the keypad left.
- Your LCD may have liquid in it. Put it in the can too, as the silica can make your screen look like brand new.

To reassemble your device, follow these instructions in reverse order.