



Sony Cyber-shot DSC-H2 Teardown

Written By: baq



INTRODUCTION

The inside story of a compact digital camera from sony. This one belong to a friend of mine, and is actually broken, the shutter button broke.

TOOLS:

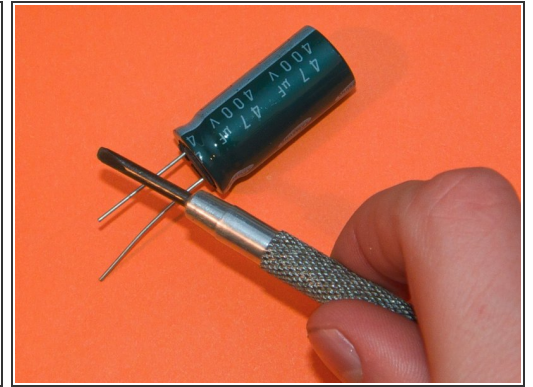
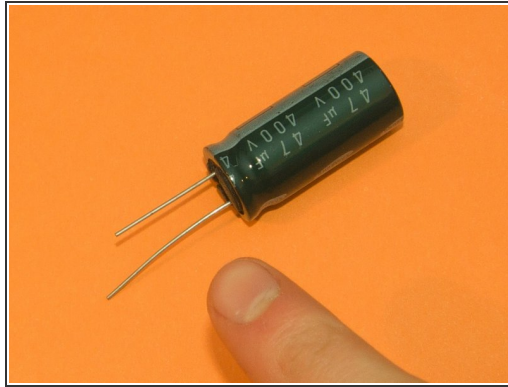
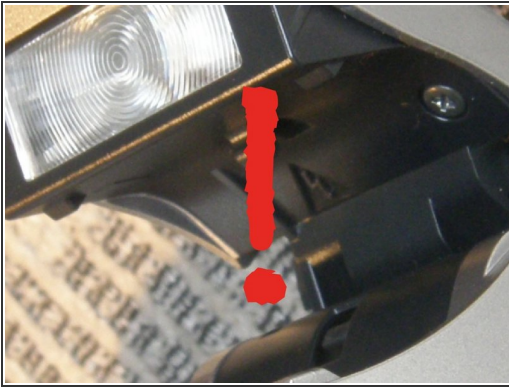
- [Phillips #00 Screwdriver](#) (1)
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Step 1 — Sony Cyber-shot DSC-H2 Teardown



- This is the Sony DSC-H2 we are going to tear down.
- It's a 6.0mpix, 12x optical zoom compact digital camera.
- It served well to the point at which the shutter button fell off.
- To tear it apart, we need a #0 Philips screwdriver only, thats very nice of you, Sony!

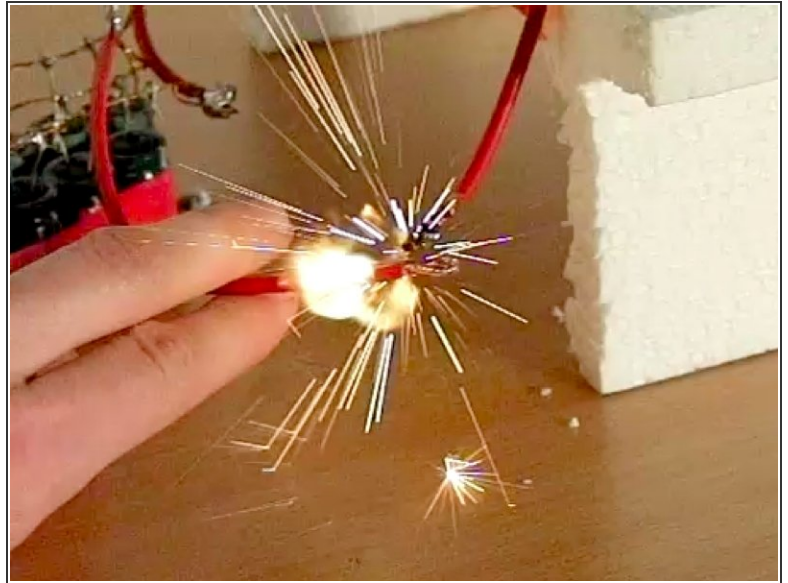
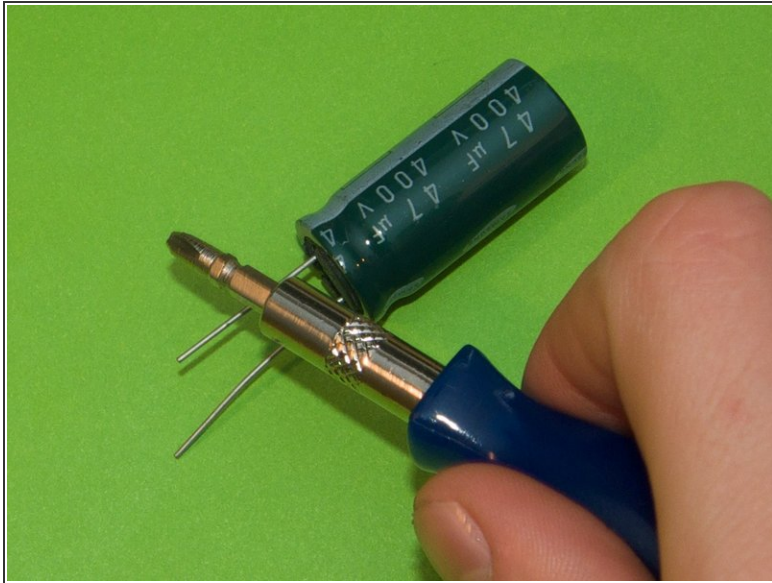
Step 2



⚠ Almost all cameras have a **high voltage** circuit and capacitor to power the flash.

- Before you disassemble any camera, **remove the batteries and wait a full day** to make sure the capacitor is discharged
- **Never** use bare fingers or tools with metal handles near a high voltage capacitor which you are not **certain** its discharged!

Step 3



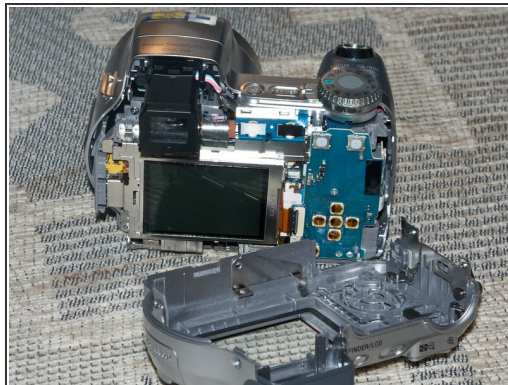
- For safety reasons, find a screwdriver that has a plastic, wooden or other non-conducting handle
- The second photo shows a spark and a plasma cloud created by rapidly discharging a capacitor similar to the one in this camera. (the picture was taken at the technical university of Łódź, Poland, **do not try this at home!**)

Step 4



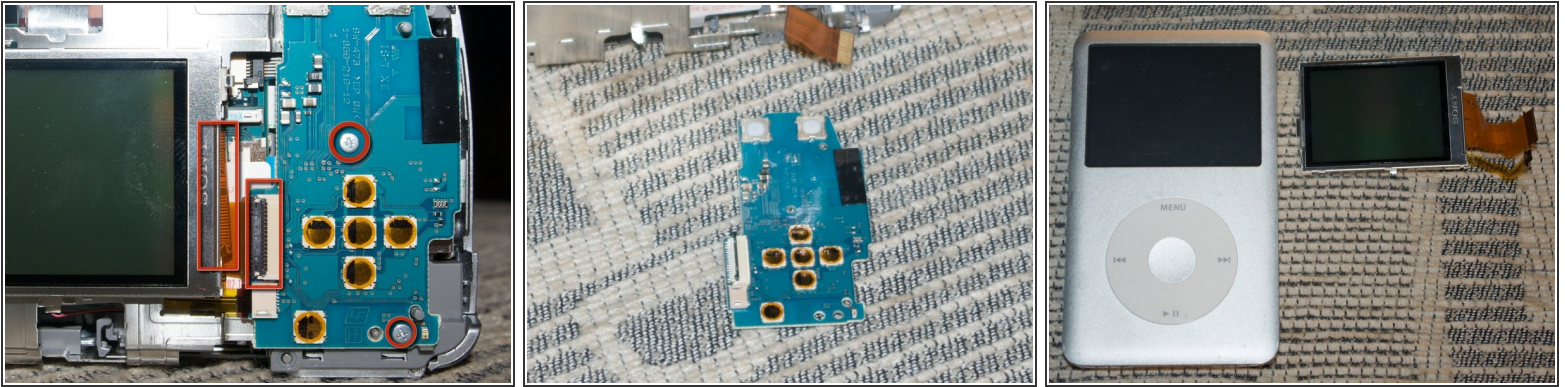
- Now, let's start the ceremony!
- Remove the two screws at the bottom.
- The two on the right side.
- And the one on the left side

Step 5



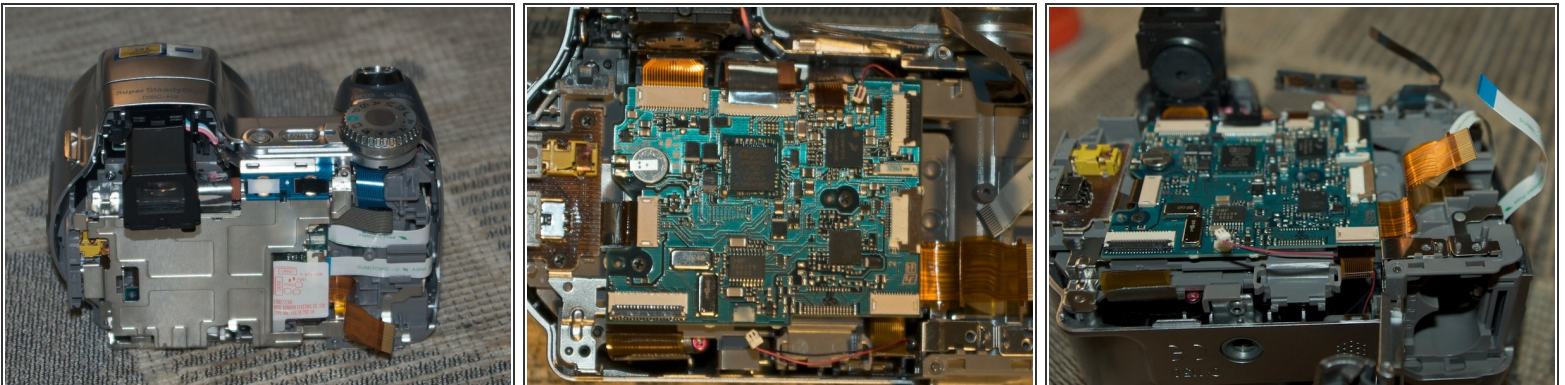
- There is one more screw at the right side of the flash lamp
- These 5 screws are identical, and unique to the outer shell of the camera.
- We may now remove the back shell, revealing the LCD and rear control panel
- The body is thick and looks durable

Step 6



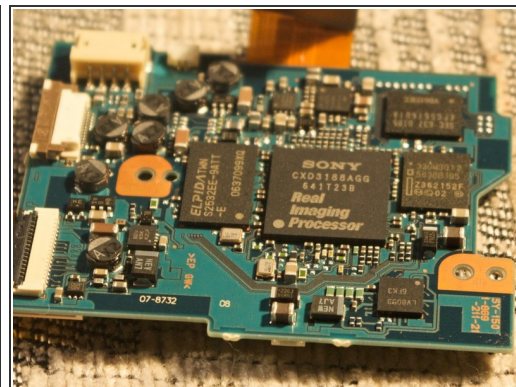
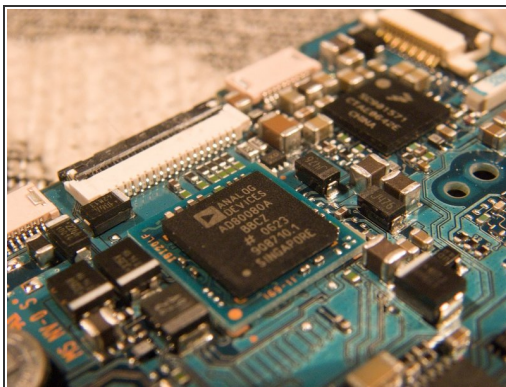
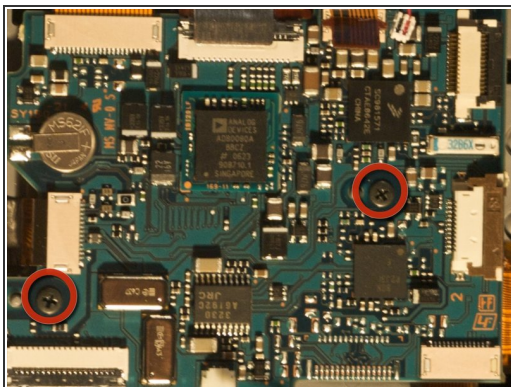
- Remove the two philips screws, and the two ribbons.
- The button panel and the LCD is now free.
- The camera has a 2.0", 85,000 dot LCD

Step 7



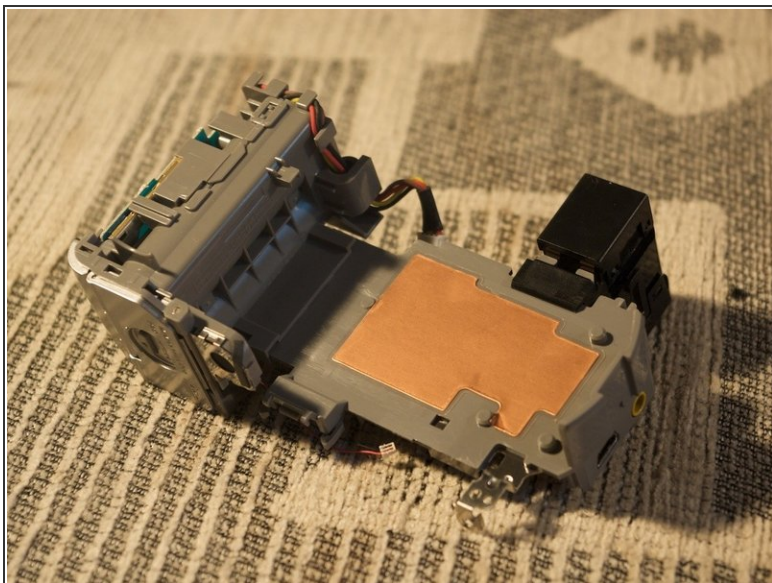
- Under the LCD, we find a metal screen protecting the logic board.
- Carefully unlock it at the top and left side
- We're in
- Remove all the ribbon cables. There sure is a lot of them.
- Some of the ribbon cables have "Halogen free" singed on them. That's nice, but we are still not throwing the camera away, not just yet.

Step 8



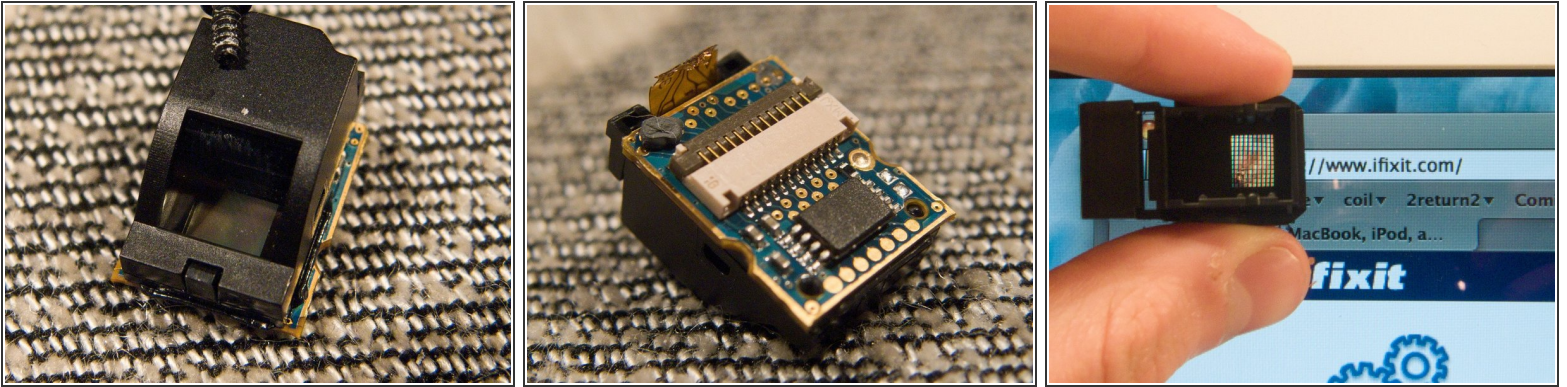
- These two screws hold the logic board.
- When removing the board, be careful about some remaining ribbon cables.
- The board is out!
- On one side we see the AD80080A chip from Analog devices responsible for capturing the analog signal from the CCD
- On the other side, we see the Sony "Real Imaging Processor" that converts raw photo data into nice and human-viewable .jpg files.
- The analog cable connecting the CCD to the logic board is screened with some pieces of metal to reduce noise.

Step 9



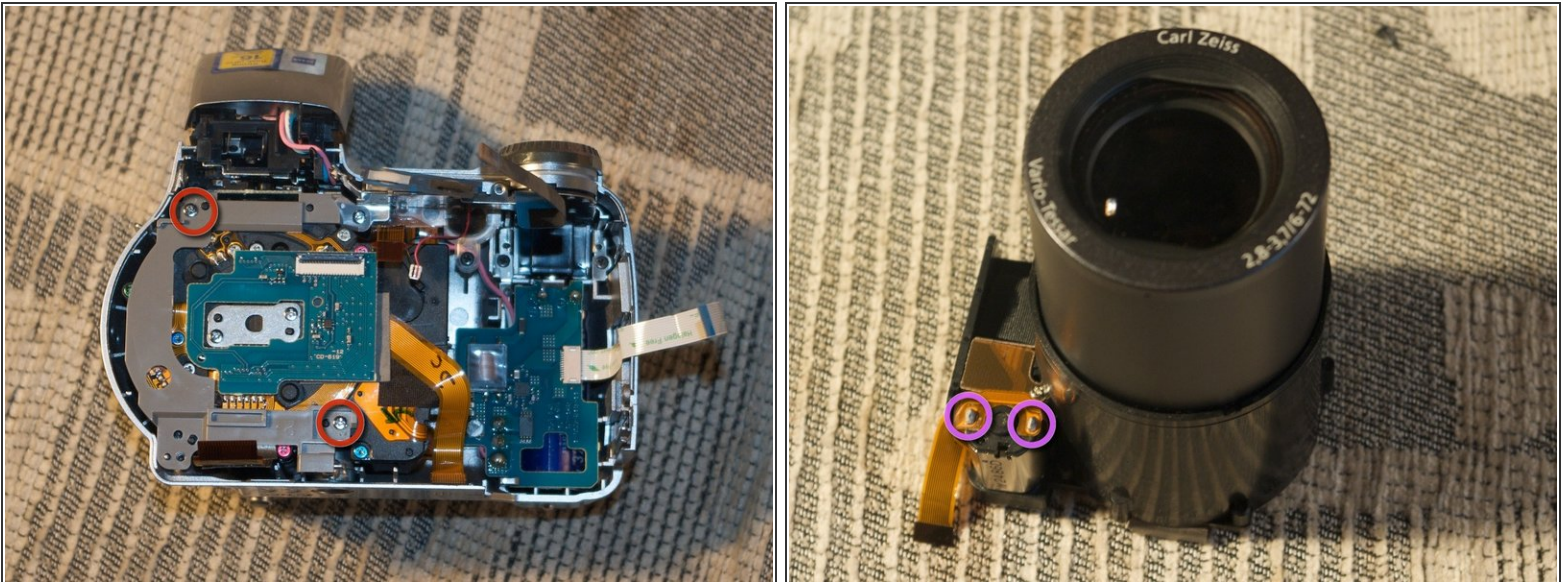
- Under the logic board there is this piece of plastic, separating the lens and sensor from the rest of the camera.
- It comes right out, no screws or whatsoever.
- Detach the electronic viewfinder atop.
- The plastic locks hold the lens and screen of the electronic viewfinder together.

Step 10



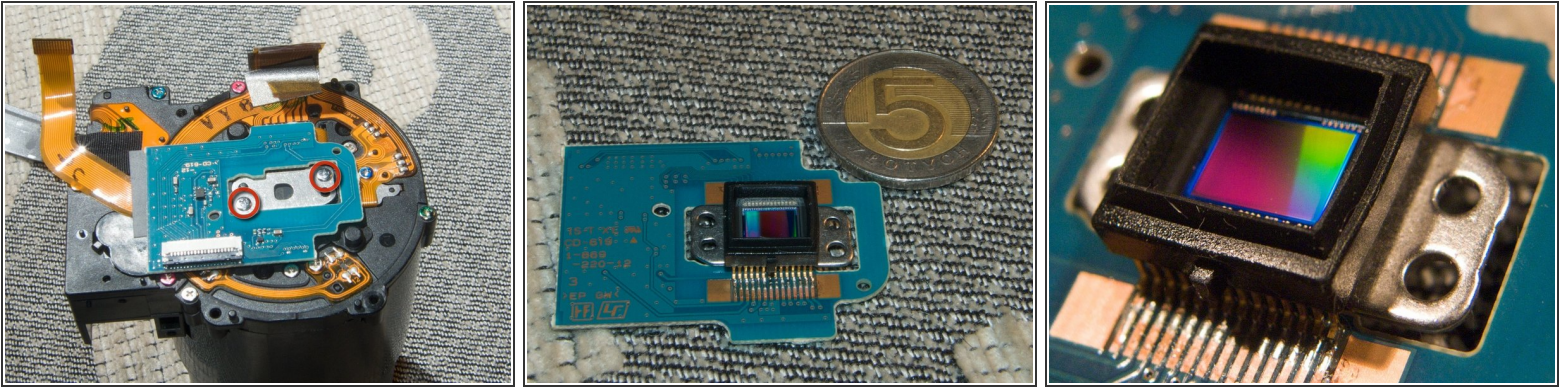
- The viewfinder screen is sooooo small!!!
- It has 200.000 dots, and about 30mm² of area
- That is some insane pixel density, look what happens when the optics used to view this display are pressed against a typical laptop display - you can see the sub-pixels!

Step 11



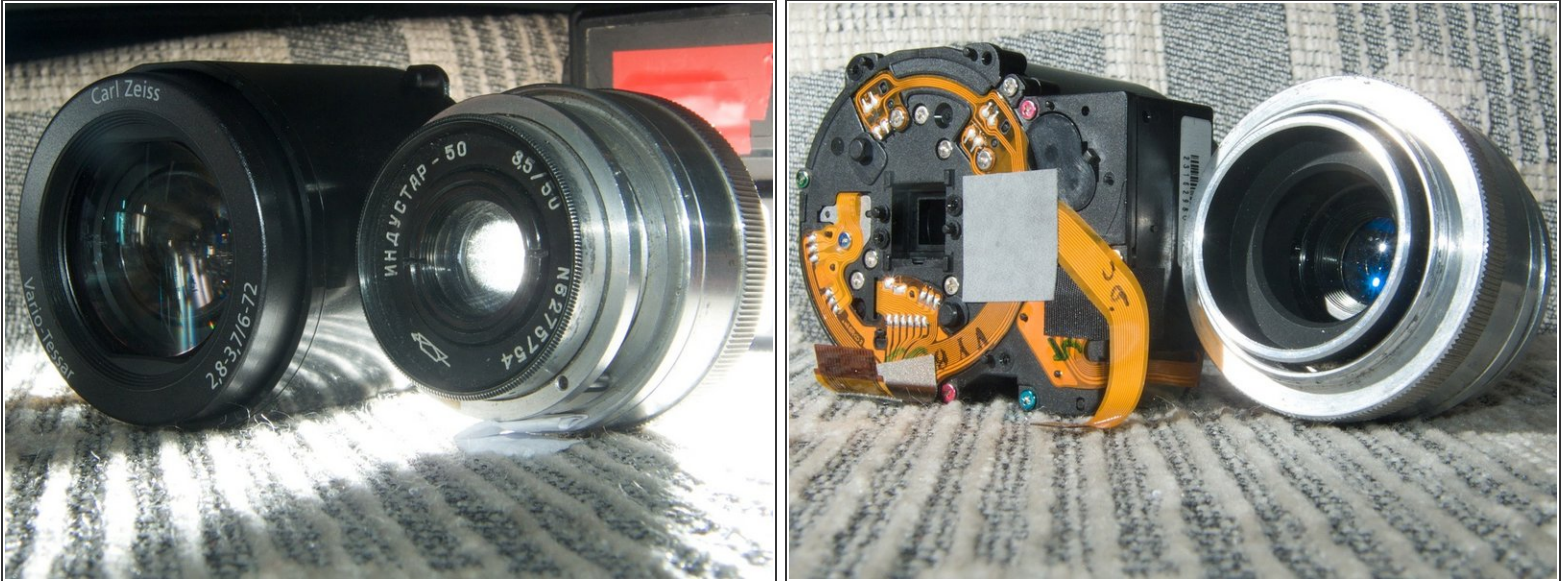
- The next two screws hold the lens and sensor module
- It's out, and it's huge.
- You can even make it bigger, apply 3 volts to the marked terminals to extend the lens.

Step 12



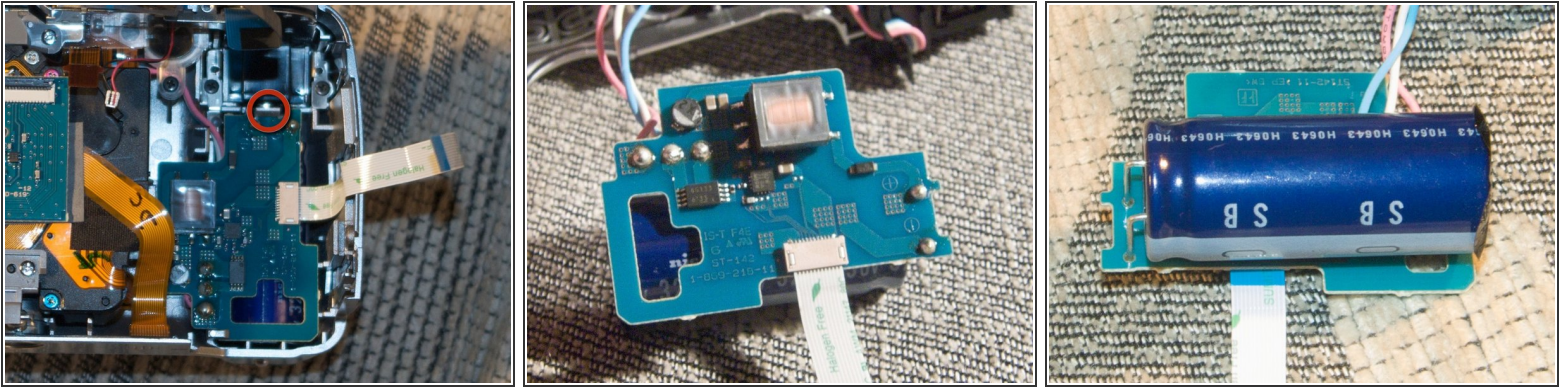
- Remove these two screws to detach the sensor from the lens
 - The sensor has a typical 1/2.5" size. That's not a big sensor.
 - Here you have a 5 polish zloty coin for comparison.
 - 5 polish zloty's is about \$1.80, in case you don't grasp the size yet :)
 - The CCD is very shinny.
 - 6 megapixels from a 1 / 2.5" sensor is like expecting 70 megapixels from a 35mm film camera. It's still better then pumping 12 megapixels out of a pinhead sized sensor in mobile phones.
- i** Manufacturers, please stop the megapixel war. Thank you.

Step 13



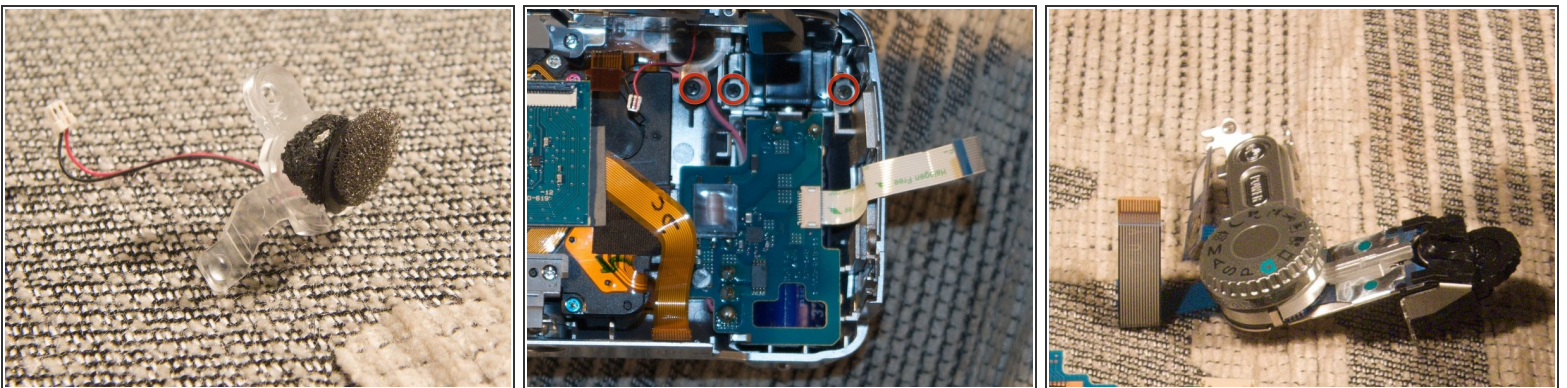
- The Carl Zeiss lens from the Sony camera alongside the lens from a Zorki-6 Soviet compact rangefinder from 1960.
- ⓘ Unlike the Sony, the Zorka still works, despite being over 40 years older.
- The back of the Zeiss has significantly more electronics, ribbon cables and servomechanisms than the Zorka lens

Step 14



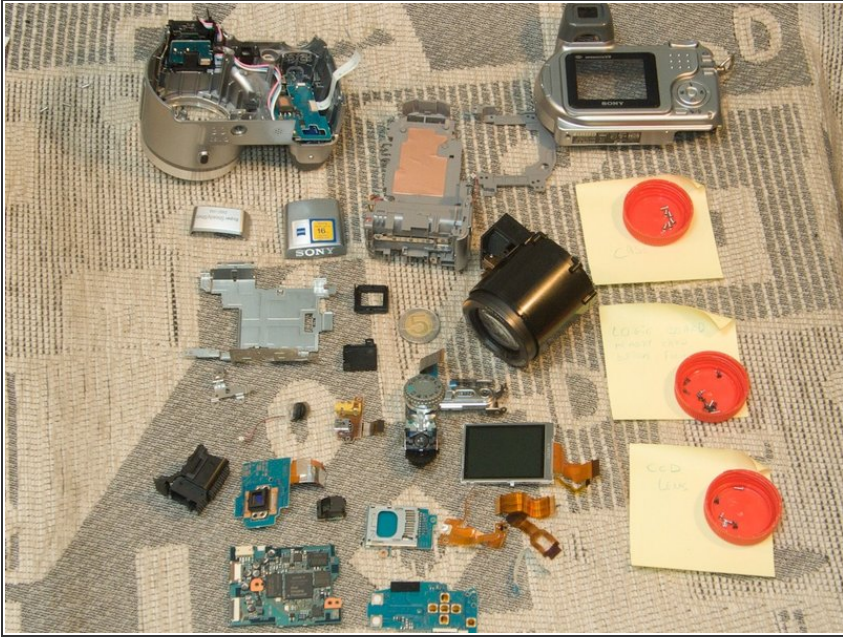
- Lets get back to the body of the camera
- Lift this plastic lock to remove the high voltage chip powering the speed light.
- 3 cables connect this board with the lamp and they are soldered.
- The capacitor has 320 micro farads of capacity and operates at 330 volts. That's 17.4 joules of potential electric energy, quite much for a speed light.

Step 15



- To get to the microphone and top button panel, unscrew these three.
- ❗ Sony made sure that the microphone catches the sound you want, and not internal motor noise, or the sound of the wind. This is actually very impressive work, most camera manufactures don't care that much.
- Finally the button panel, with the broken shutter button.

Step 16



- That's it. One Sony DSC-H2 in parts. Thanks for reading.

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