

Butchering a C270 webcam & adding an LED

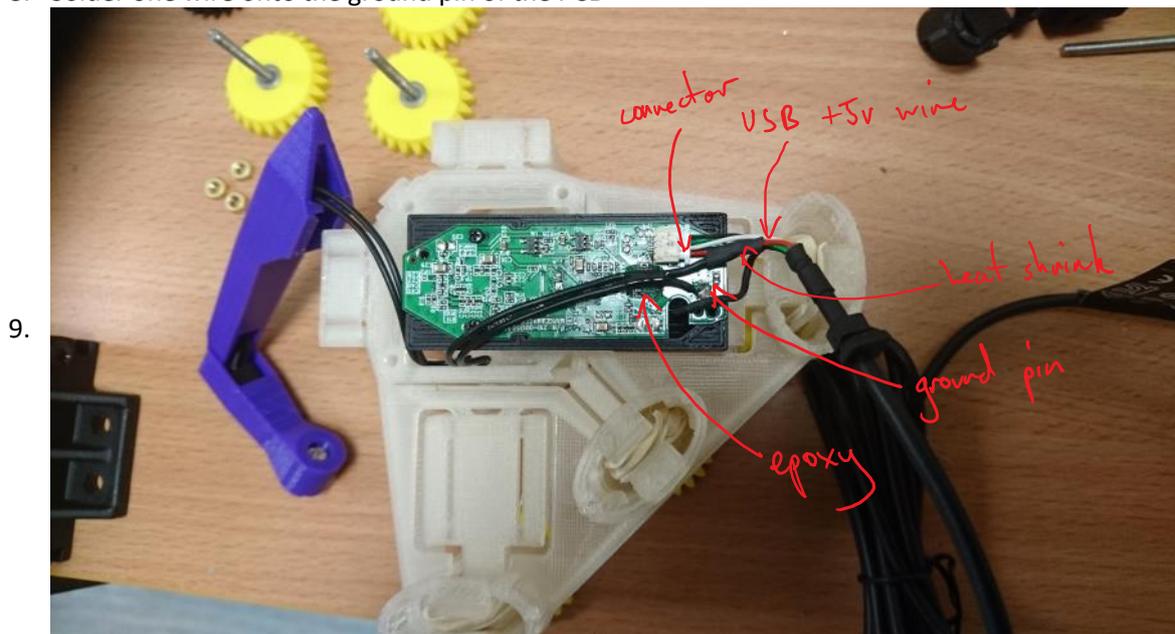
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The Logitech C270 is a handy, easy-to-get-hold-of webcam that I've often used in the OpenFlexure microscope. I have not properly documented how to disassemble it, as it's fairly straightforward - but I thought it would be good to document how I tap into the power lines to power my LED (with series resistor). **DO NOT TEST THIS ON YOUR COMPUTER!! If it is short-circuited, it will damage your motherboard. Use a Raspberry Pi or a hub first to check it lights up. I don't sell C270-based kits precisely because I am afraid of people wrecking their laptops...**

DO THIS STRICTLY AT YOUR OWN RISK. I ACCEPT NO RESPONSIBILITY FOR FRIED USB PORTS!

To use the C270 webcam with the OpenFlexure microscope:

1. Open the casing (there are two screws, accessible from the front I think)
2. Remove the PCB from the casing (it's held on by two screws) - retain the screws (as spares)
3. Snap the back of the case to remove it from the cable (the cable passes through a hole in the back of the case, so you have to snap the plastic with side cutters to remove it completely)
4. De-solder the microphone from the circuit board (it's a cylindrical silver component with a black top, it's the biggest thing on the PCB).
5. Unscrew the lens from the camera (retain the screws)
6. Using the screws from step 5, screw the PCB onto the bottom of the optics module
7. Unscrew the lens from its holder, and push-fit the lens, upside down (i.e. with the threaded part pointing upwards), onto the top of the optics module
8. Solder one wire onto the ground pin of the PCB



10. Carefully scratch away the insulation on the red USB power wire using a scalpel or wire strippers. You're aiming to remove the insulation but NOT break the wire.
11. Solder another wire onto the exposed conductor on the USB power wire.
12. Gently pull the red USB power wire out of the connector. Slide on a small piece of heatshrink over the join and heat it up.
13. Re-insert the USB power wire into the connector.
14. Use a blob of epoxy to attach the wires to the camera board; this is important to avoid the soldered connection snapping at an inconvenient moment.
15. You may also want to epoxy the USB wires, as the power line will be weakened by your solder joint. I've not bothered so far...