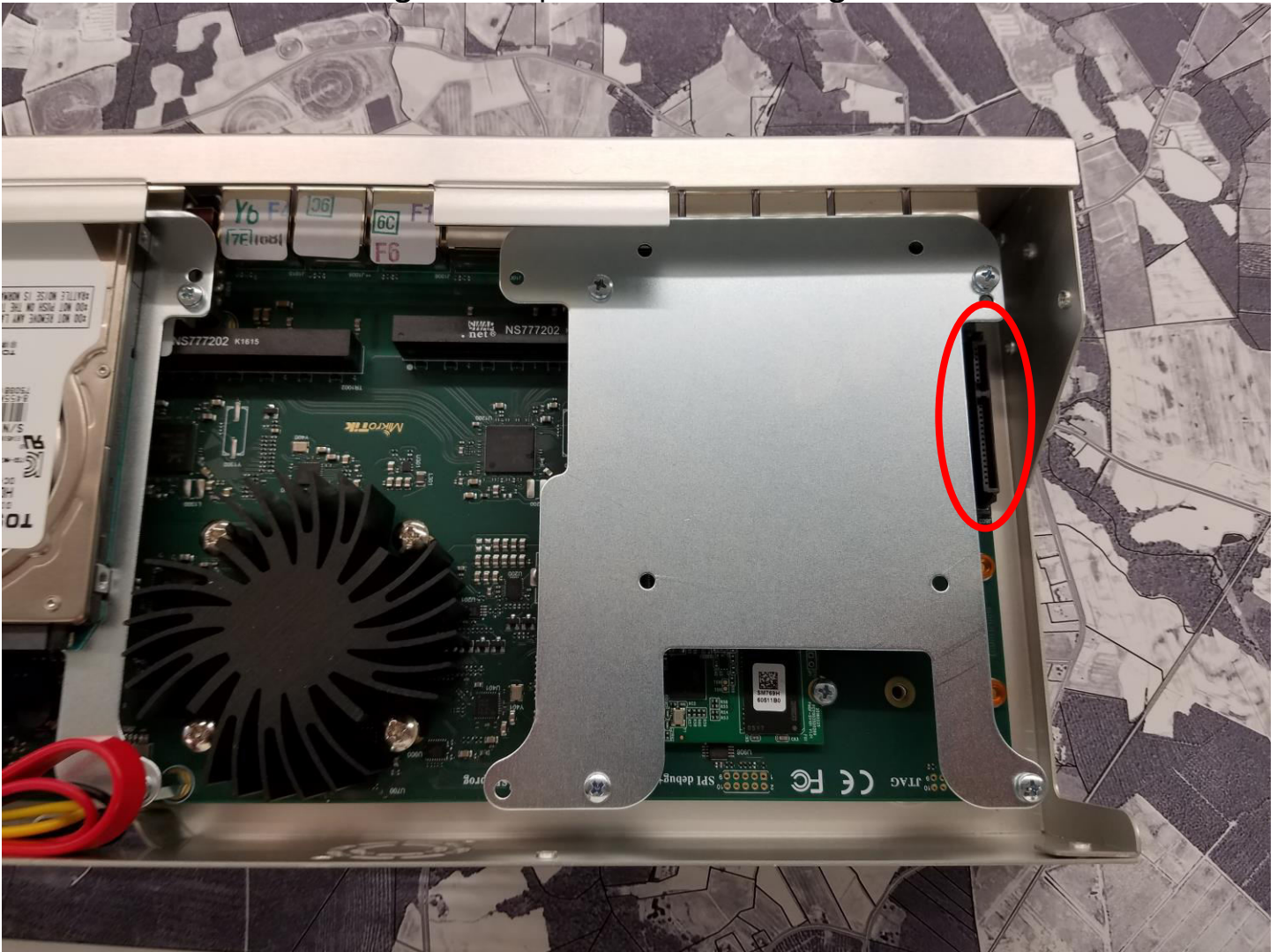# Tutorial: How to defile your RB1100AHx4 to add a fan

This is what the 5v fan pinout looks like, and no, I've yet to see this function properly. So instead, we can repurpose an unused SATA connection on the board!
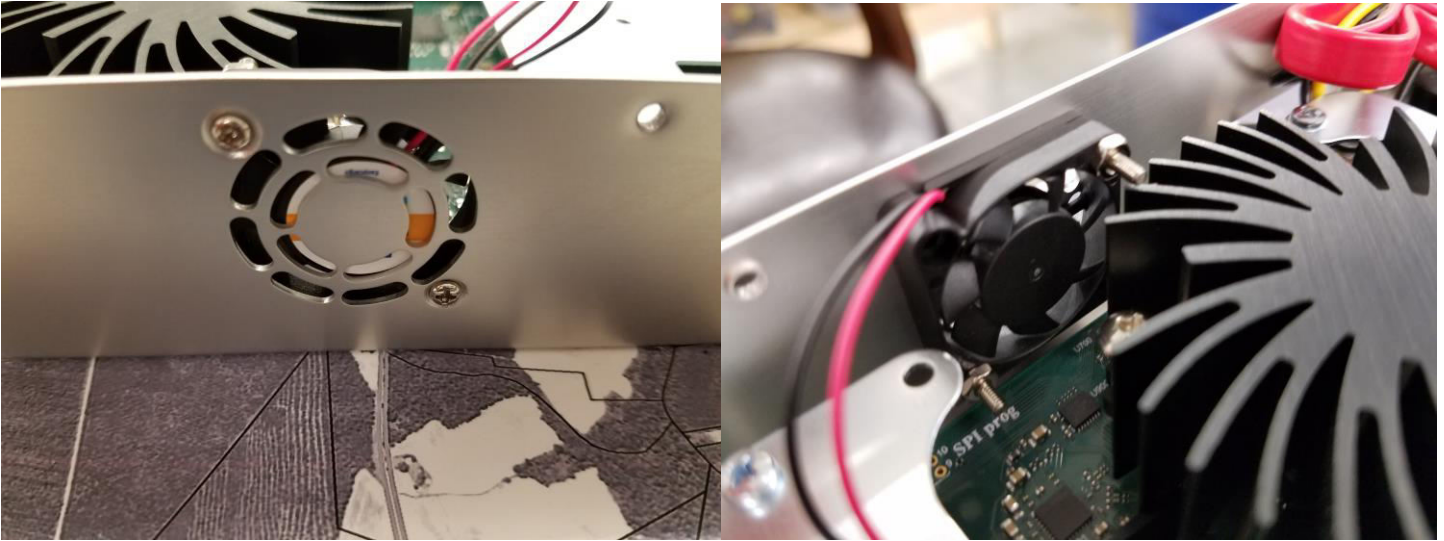
1. Assemble your gear. You'll need a soldering iron, a 30mm 5v 2-pin fan, two male breadboard jumper cables, SATA connector provided in the box, and heatshrink. I like the heatshrink just to keep the solder from shorting out on eachother or the router casing.
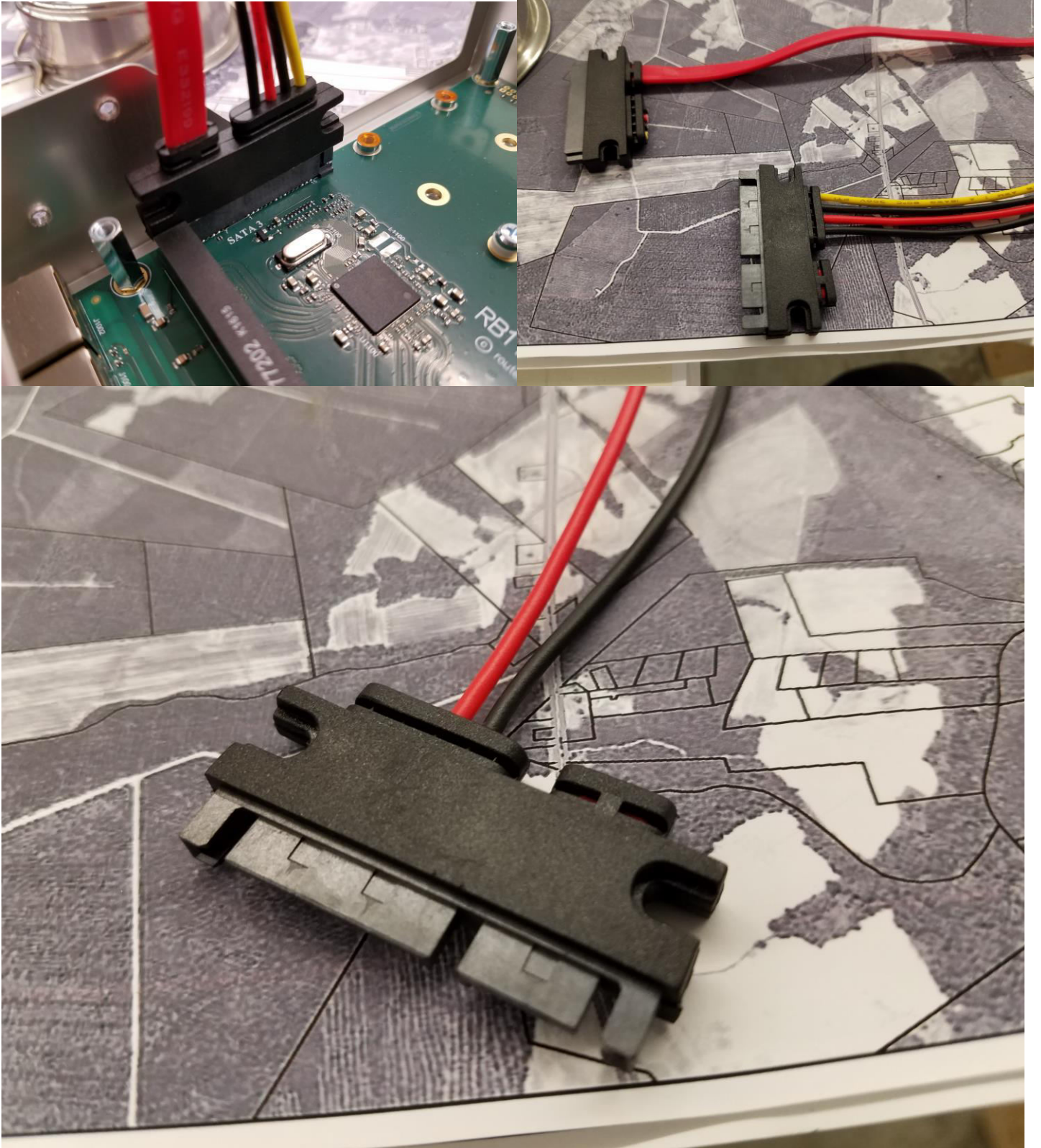
2. Disassemble your Dude Edition router, and locate the SATA connector that you will use for powering the fan. There's only a few screws holding the top of the case together.
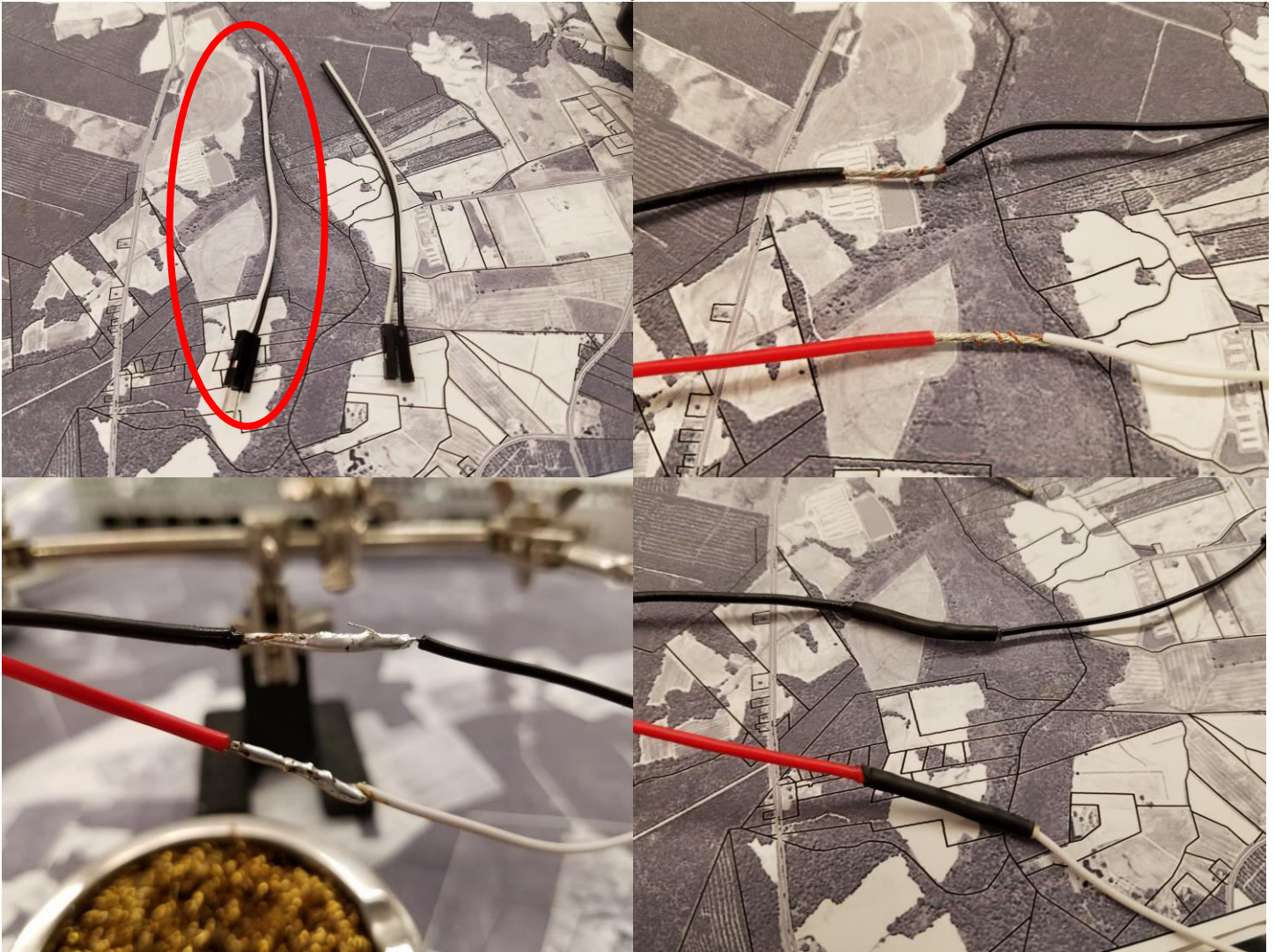
3. Screw your fan into the designated port on the back of the router. It's slightly difficult to get the nuts on the back of the screws, so if required, you can take off the processor heatsink to get a better angle. I didn't need to do that, but if you choose to, be careful that you don't get any of the thermal paste on yourself or anything else. There's also a metal plate underneath the board that will start sliding around after removing the heatsink if you're not careful. At that point, you might have to take the board out to get the metal plate back on to hold the heatsink down.

4. Now it's time to start mutilating the SATA connector that
   MikroTik gave us. Make sure to leave enough length on the wires
   so that you can thread the finished product around the hard drive
   mount platters, depending on which one you're using. I'm using
   SATA 3. The SATA standard says that the black and red wire pair
   (shown on the left of the yellow and black wire pair) provide GND
   and 5V respectively. These are what we want.

5. Now, strip your wires back on the newly mangled SATA connector and your breadboard jumpers. Make sure you use the MALE ENDS of the breadboard jumpers. Wrap the wires around eachother first, put your heatshrink around the cables, and then solder them together with the heatshrink out of the way. Then you can apply heat to the heatshrink and complete the new cables.

6. Plug in your new cable to the SATA connector on the board, then plug in the jumper ends to your fan. Power on the Dude Edition to test it out. The fan should start spinning almost immediately, and will be powered on until the router loses power. Congratulations, you have a permanent fan now!