

# Hardware Mods

Modding homelab hardware to make it work better for me

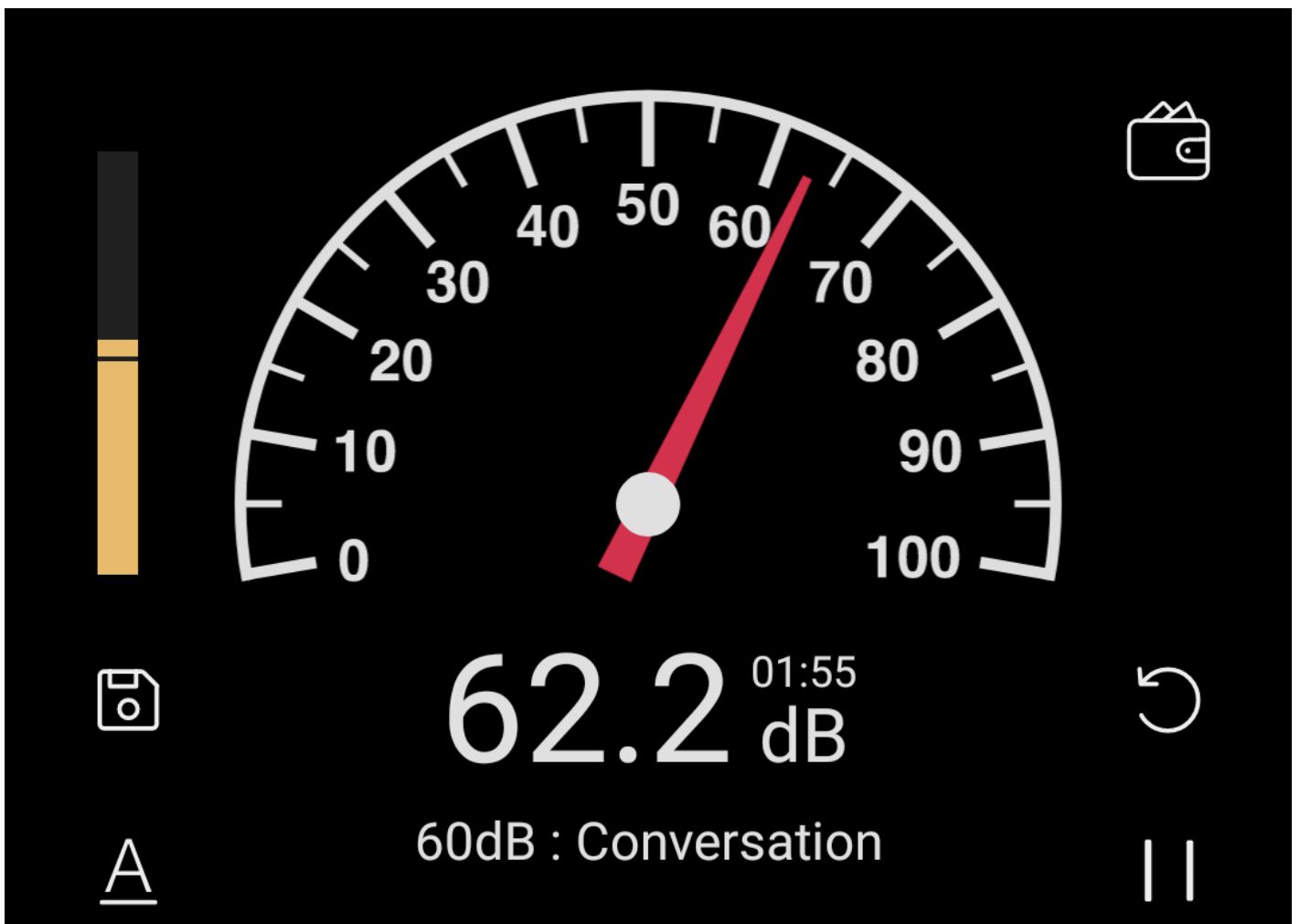
- [HP ProCurve 2910al Silent Fan Replacement Guide](#)

# HP ProCurve 2910al Silent Fan Replacement Guide

Note: This guide is originally from March 2023.  
It's still accurate, but is not up to my current standards.

## Why?

My HP ProCurve 2910al switch is a noisy beast with its stock fans...



Not a great fit for a small flat, where I also need to sleep!

So, let's fix that!



*my switch with its new fans*

## What you'll need:

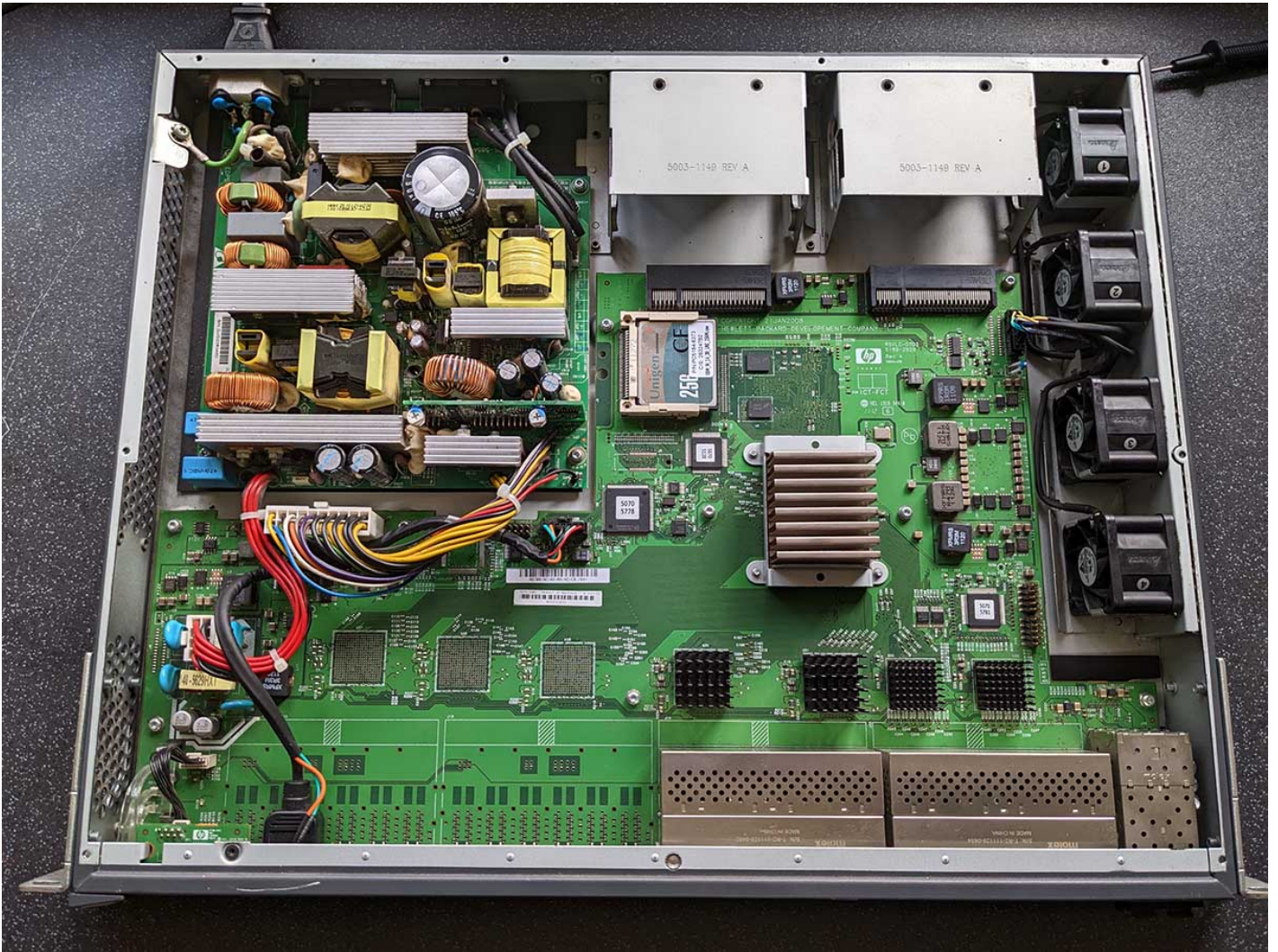
- One HP ProCurve 2910al switch
- 4x 40mm 12v PWM fans (I used Noctua NF-A4x20 PWM fans, although any will do!)
- A T10 Torx screwdriver
- A pair of wire cutters
- A pair of pliers

## Step 1: Disassembly

Use your T10 Torx screwdriver to remove the 8 screws securing the top panel to the switch.



Slide the panel back, and lift it off to reveal the switch's innards.



Next, unplug the fan connector from the main board, then lift out the fans.



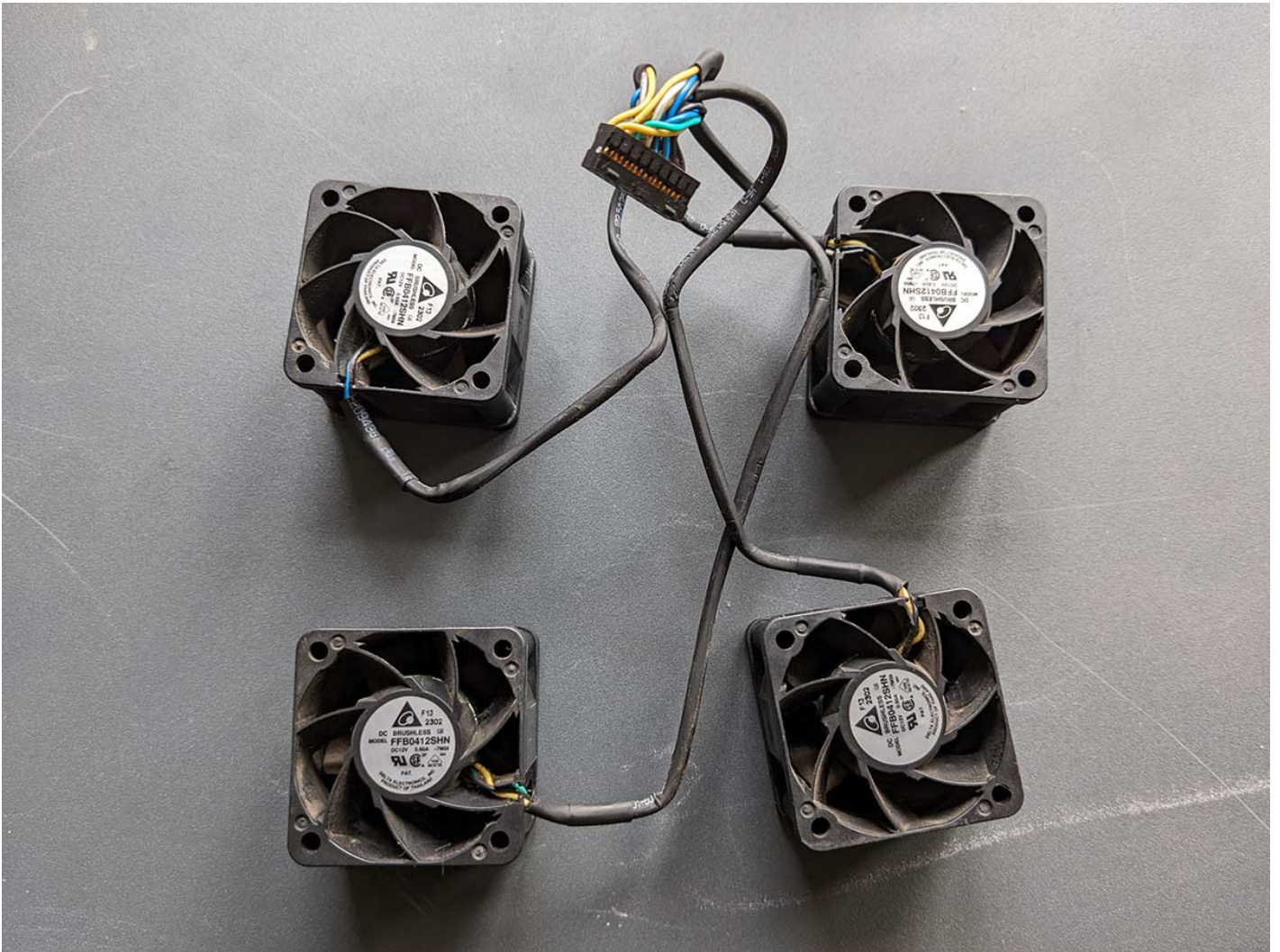
5003-1149 REV A

DEVELOPMENT COMPANY  
RSVLC-0703  
5189-2929  
Rev A  
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HP  
ICT-FCT  
HCL 191A 94Y-B  
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XFMR5 3K3M 1120  
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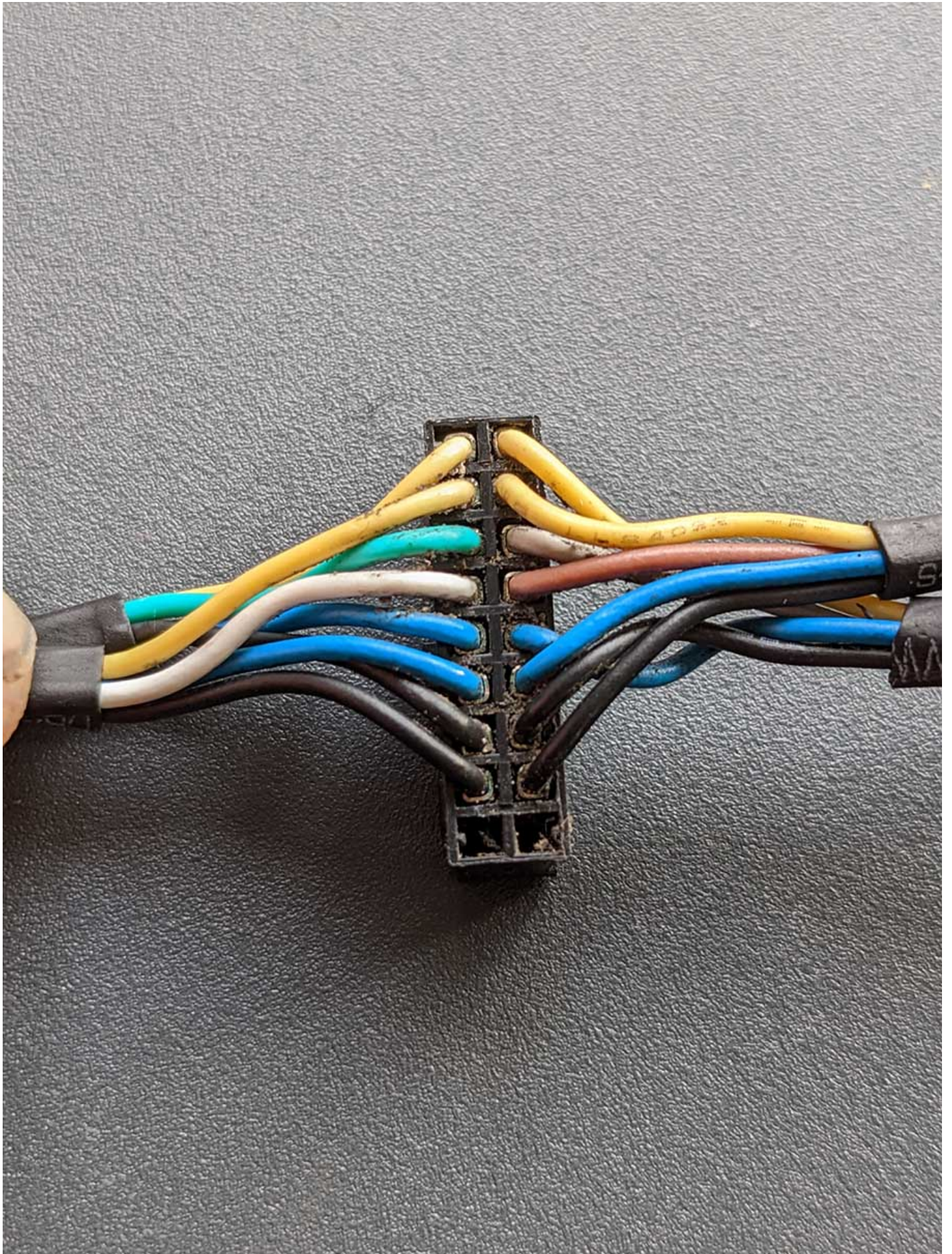
1  
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We now have our culprits!

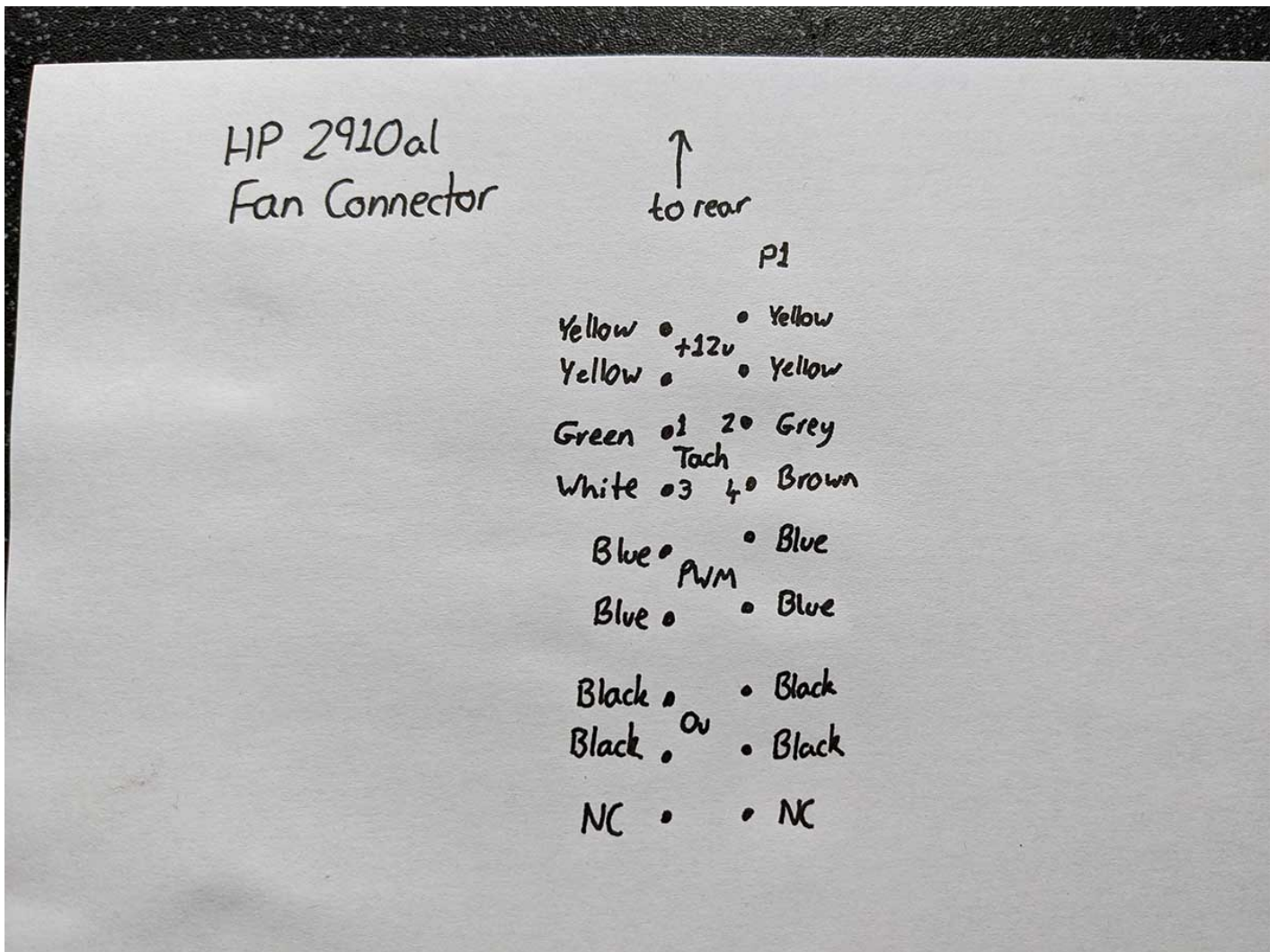
The stock fans are Delta FFB0412HN 40mm fans.



But, what the heck is that weird fan connector?



Let me decipher that for you :)



## Step 2: Connecting the new fans

I cut the original fan cables one at a time, leaving about 40mm attached to the connector.

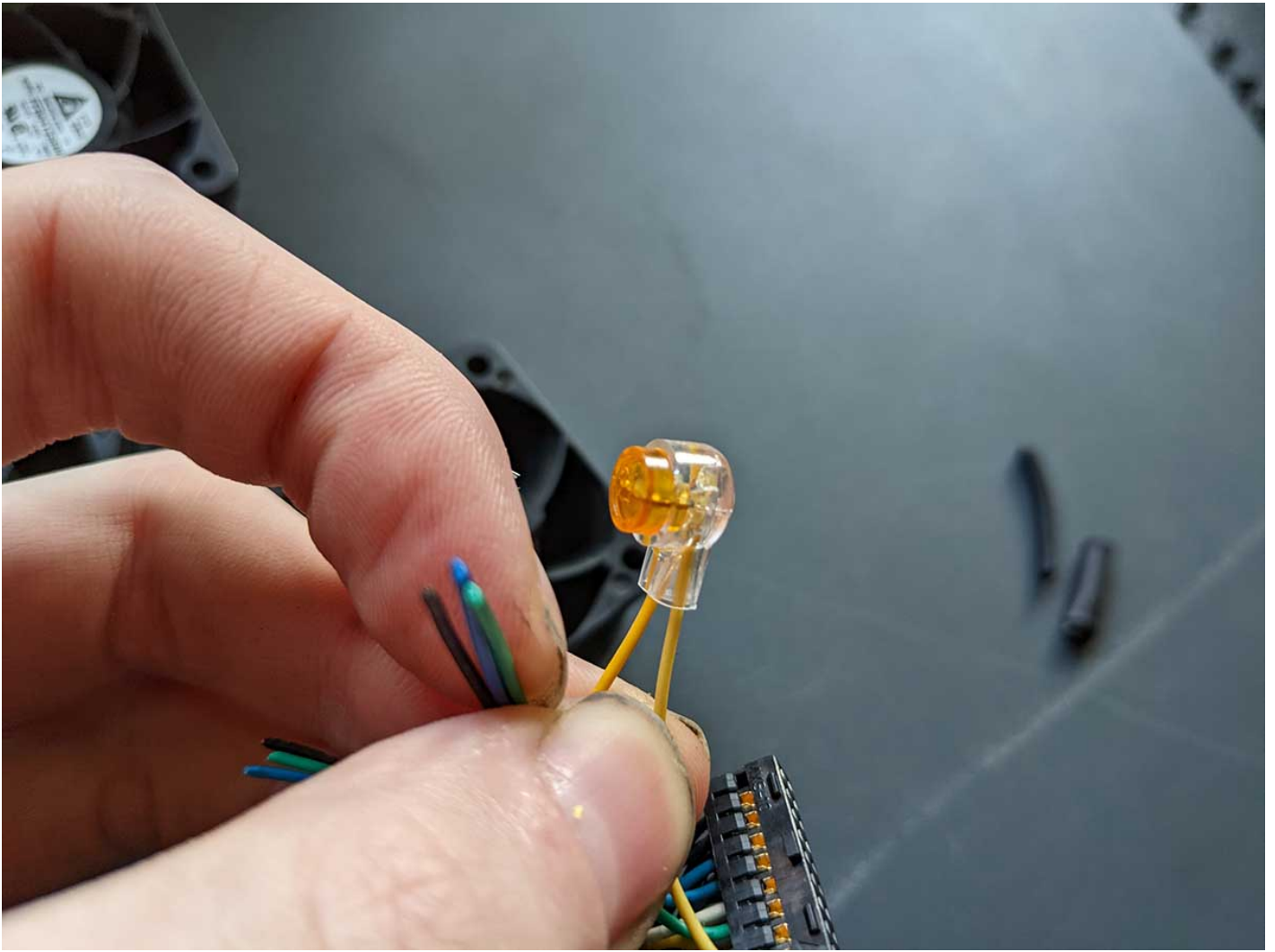
Then, I cut the cables of the new fans to match the length of the originals, and added a small piece of heat-shrink tubing over them. (don't shrink it down just yet!)



I used the included Scotchlok crimps to connect the new fans to the weird connector, because I am lazy.

However, you could solder them if you like!

Yellow, black and blue wires always connect to the same colour, but the tacho wires have different colours on the connector, to help in identifying which fan is which. (this is why I drew that diagram earlier :))



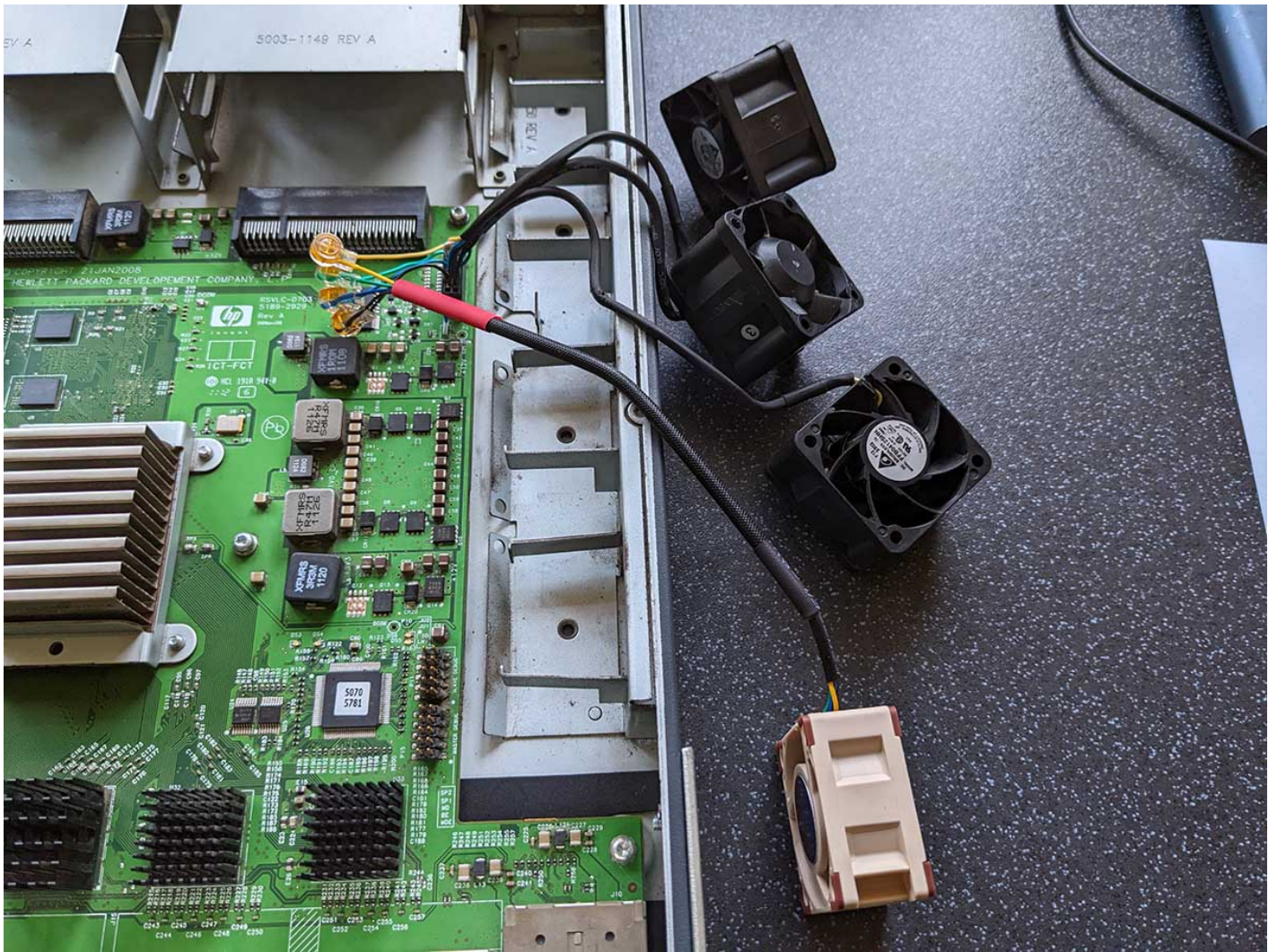
Insert each pair of wires into the Scotchlok connector, then crimp the connector with your pliers.

You'll need to repeat this for each of the four wires.

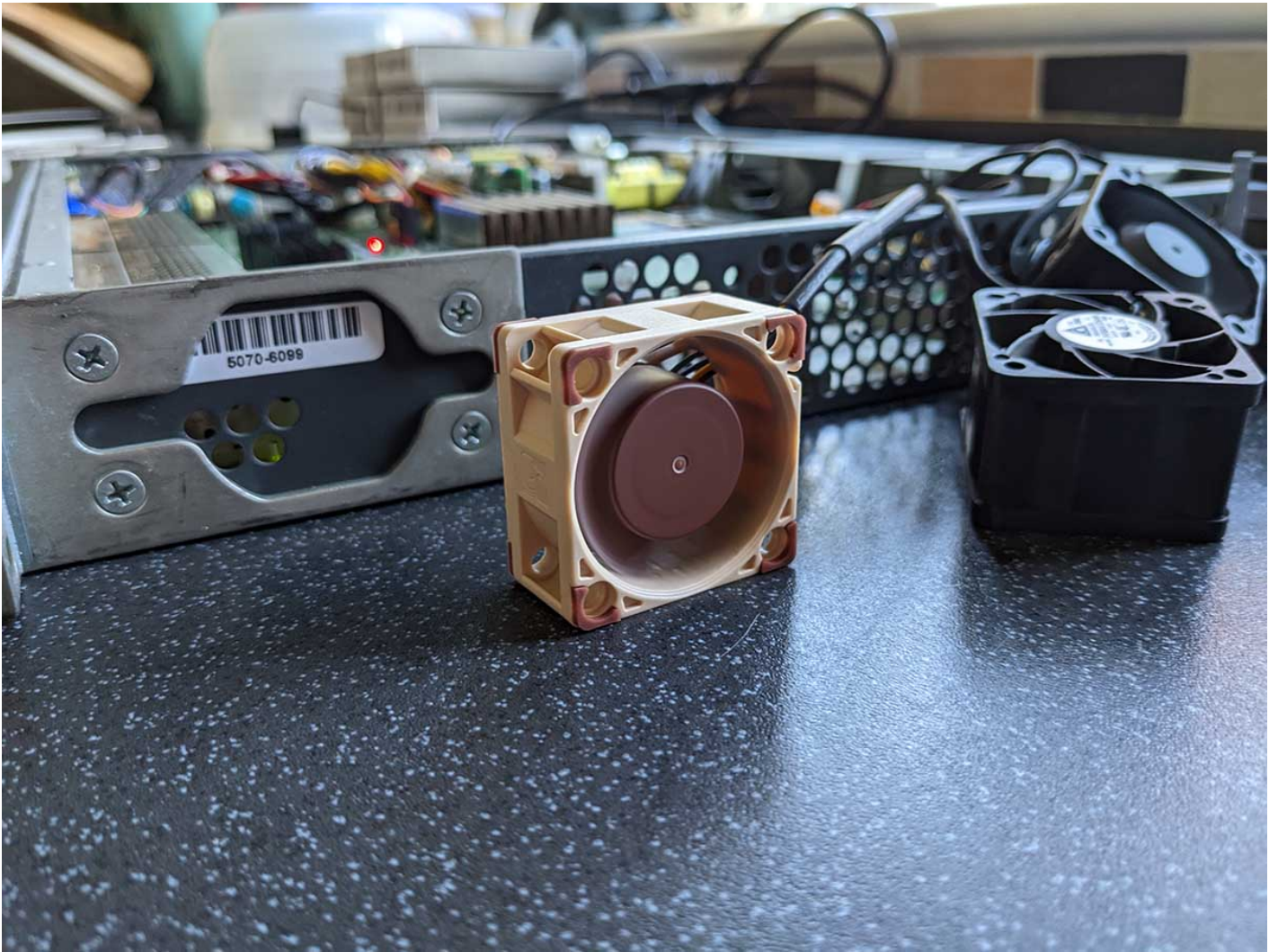


One new fan installed!

I plugged the fans back into the switch at this point, and powered it on to test if the new one works.



It works, and the switch isn't showing an error either! Sweet!



I then repeated the above to connect the other new fans, and shrunk down the heatshrink tubing.

The new fans are now ready to be installed!

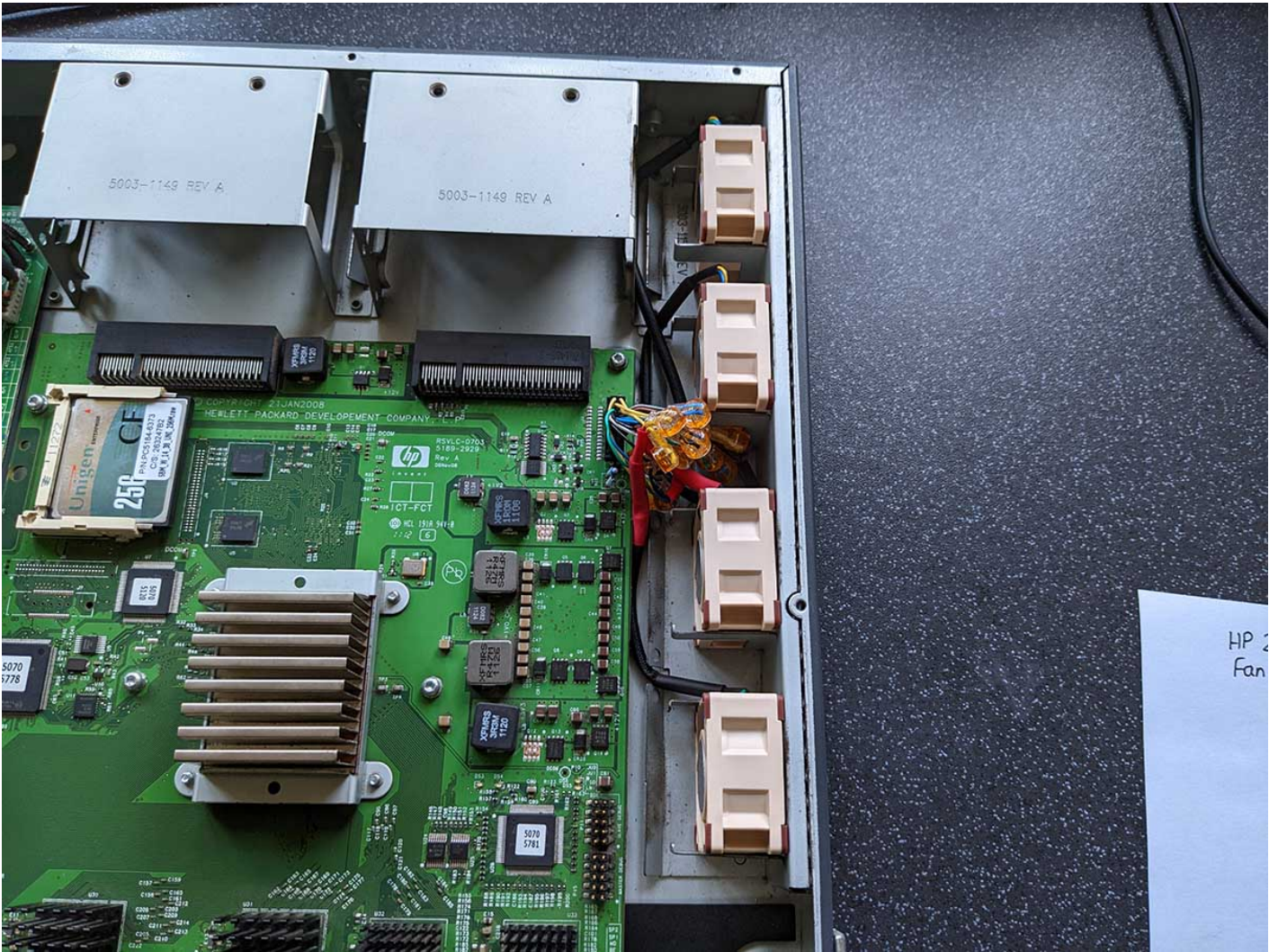


## Step 3: Installing the new fans

Before installing the new fans, I had to squish the metal prongs which hold them slightly inwards, to make sure they stay snug.

Then, the new fans were simply pushed in.

Make sure to route the cables as tidily as possible, using the cable guides in the switch casing. Also, make sure not to block airflow, or the rear expansion slots!



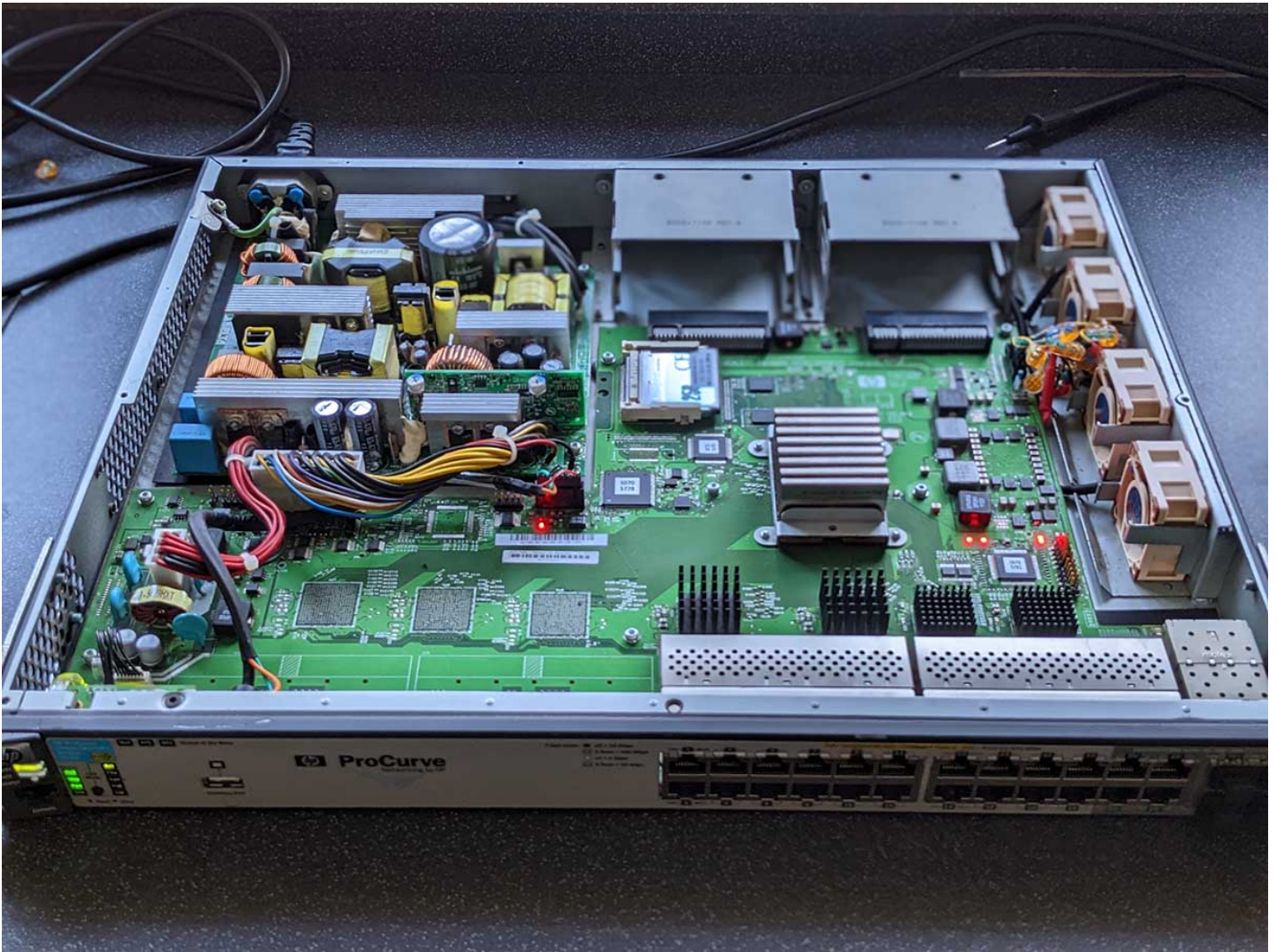
## Step 4: Testing

With the case still open, plug in the switch, and let it start up.

The new fans should now be spinning, and the switch should have no red error lights lit.

If this isn't the case, check your connections, then try again!

(I missed crimping one of the connectors down, so I had to go back and re-do it!)



## Step 5: Reassembly

Replace the top panel on the switch, then use your T10 screwdriver to screw it back on with the 8 screws.



## Step 6: Testing (again!)

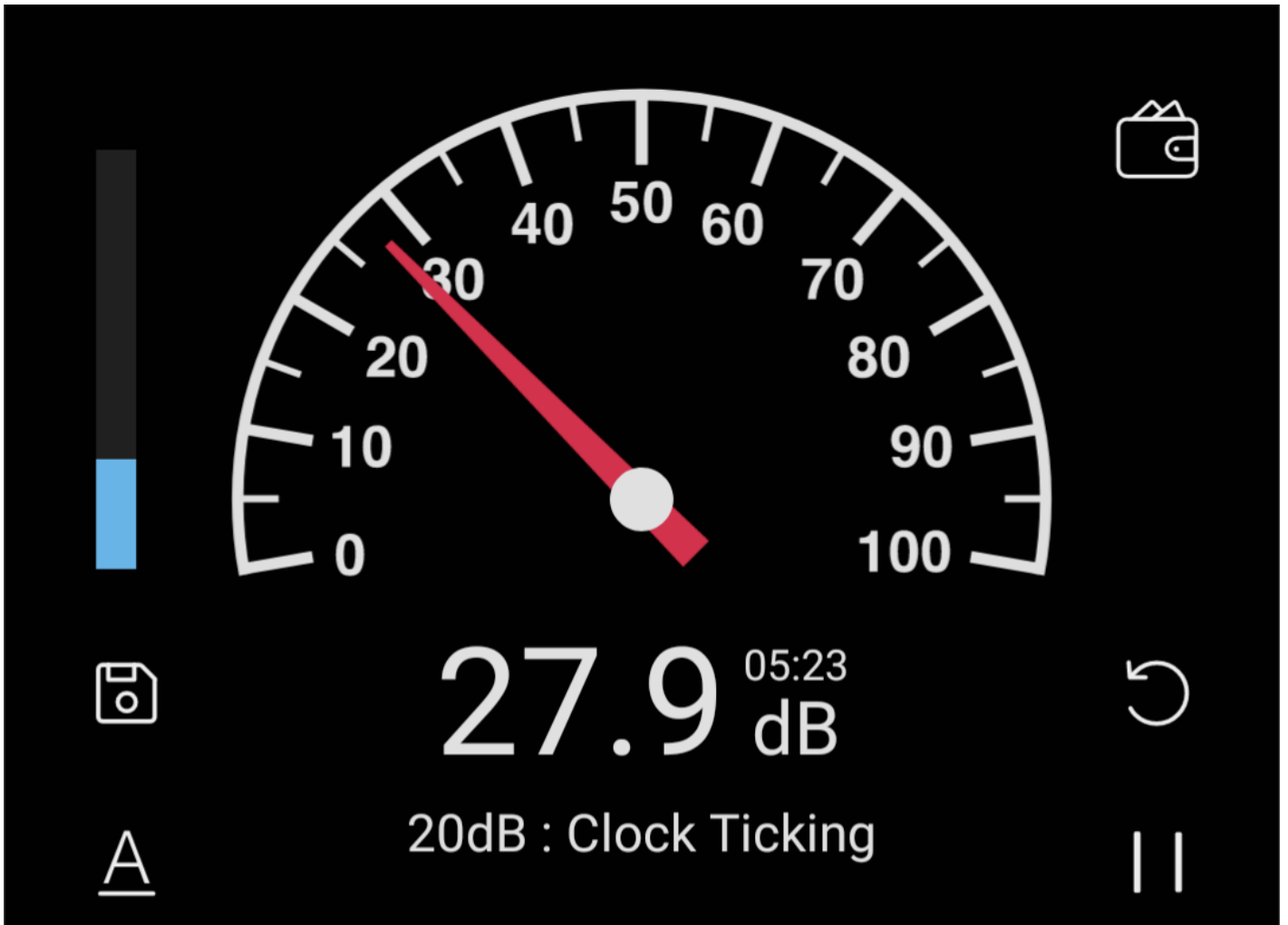
With the switch reassembled, plug it in, then let it boot up.

You should be able to feel air blowing from the left hand vents with your hand.

If no error lights are lit after about 2 minutes, the operation was a success!



I could already tell that it was now MUCH quieter, but let's test that, to make sure I've not suddenly become deaf!



*Daaaaammmmmnnnn!*

It's now barely audible in a quiet room! (in fact, my clock was louder!)

## "but what about the temperatures???"

A few people raised concerns that the switch would overheat with the new fans, since the 40mm Noctuas have about half the airflow of the originals.

But, I am happy to confirm that after 6 months, my switch hasn't even broken 48C!

```
# show sys temp

System Air Temperature
Temp      Current  Max   Min
Sensor    Temp     Temp  Temp  Threshold  OverTemp
-----
Chassis  46C     47C   32C   57C        NO
```

That's with it loaded up with four Unifi AC-Pro access points, two VoIP phones, one dual-SFP+ expansion module with both ports used for a SAN, and fifteen other non-PoE devices :))

but for now, that's all!

I hope this guide is useful for at least someone :)