Lenovo ThinkPad S540 Wi-Fi antenna cable Replacement

Fix poor or intermittend Wi-Fi connection Lenovo S540

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INTRODUCTION

Many reports are on the internet of Lenovo laptops getting poor Wi-Fi connections.

Here is one thread that helped me out:
https://forums.lenovo.com/t5/ThinkPad-S-...

In my case it was the cable to connector "1" on the Wi-Fi card that was broken.

This guide is what I did to fix my problem with poor Wi-Fi

TOOLS:

- Phillips #1 Screwdriver (1)
- iFixit Opening Tools (1)
- Soldering Iron (1)

PARTS:

- New Wi-Fi antenna cable with a PCI-E mimi connector (1)

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Step 1 — DISCLAIMER !!

- I cannot offer any guarantee that following this guide will give you the same results.

- Furthermore, I cannot take responsibility for what-ever damage you may inflict on yourself, your surroundings and any PCs you attempt to fix following this guideline.

Step 2 — Diagnose the real issue

- Make sure it **IS** your PC and **not** your Wi-Fi router which is the problem. Check if your mobile phone has a far better reception on the same network

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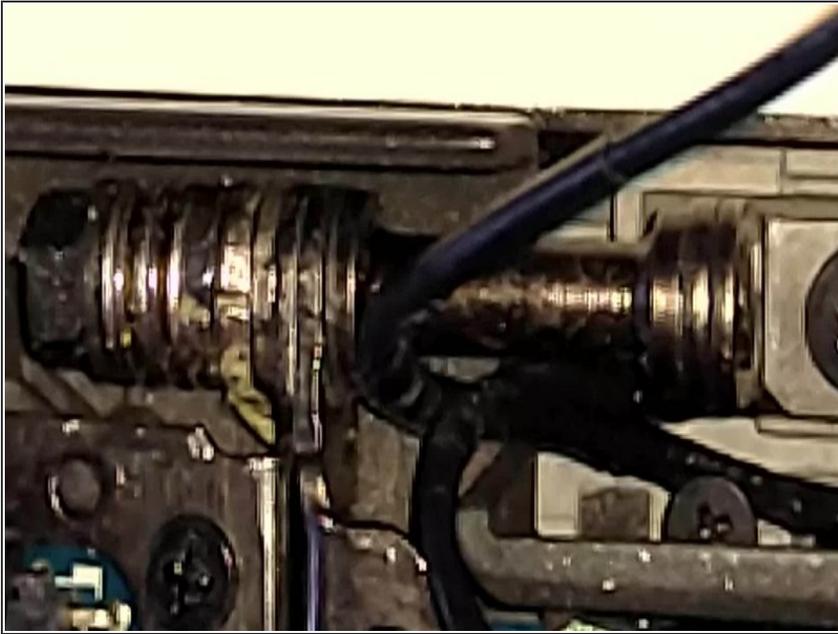## Step 3 — Open the box

- Remember to shut off the internal battery via the BIOS setting before you mess with the insides of the PC. See https://forums.lenovo.com/t5/ThinkPad-T4...

- I opened the PC according to the descriptions I found on these pages (There are way more pages listed for Wi-Fi Antenna replacement but the below are enough)

- Remove LCD bezel https://pcsupport.lenovo.com/dk/da/solut...

- Remove LCD hinge cap https://pcsupport.lenovo.com/dk/da/solut...

- Remove base cover https://pcsupport.lenovo.com/dk/da/solut...

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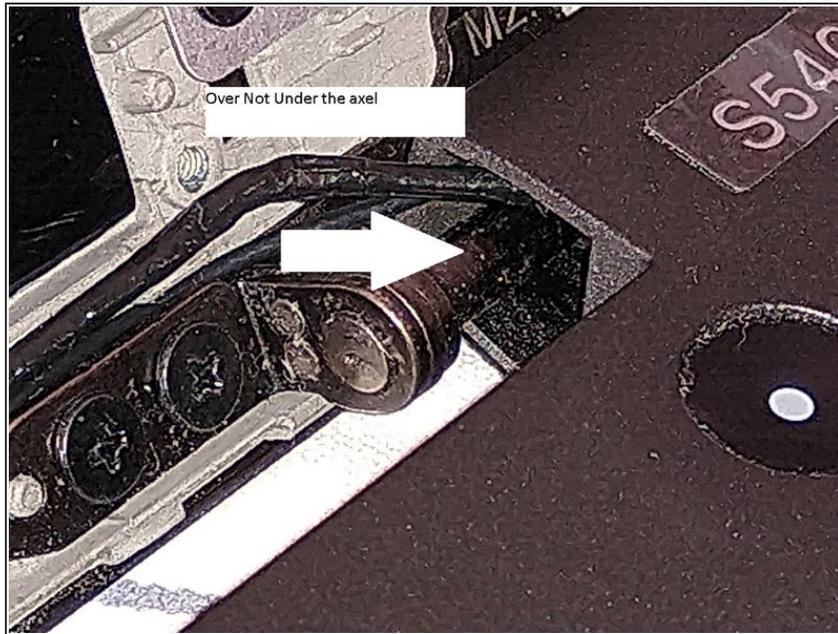
Step 4 — Diagnose the Wi-Fi antenna cable

- Carefully release the two Wi-Fi antenna cables from the Wi-Fi card

- Bring the two cables out to the same side as the LCD screen. In other words untangle them from the hinge

- Check if they are broken. There are two ways

  - Fingersnap the loose end of the cable to see if it flexes abnormally in a specific point, indicating a broken cable. In the video you can notice a specific point **just at the axel** where the cable flex much more than the rest of the cable

  - Connect an ohm-meter in the mini PCI-E end between the shield and the core. Start wiggle the cable

    - The resistance should always be zero, because of the antenna layout (An open-ended rectangle)

    - If the cable is trashy, the resistance will deviate from zero when the cable is being wiggled

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Step 5 — Here the cables gets proken

- This is most likely where it gets broken. The passage is narrow and sharp

Step 6 — Replace the cable(s)

Over Not Under the axel

- After it is established which of the cables are broken, we have to replace them - Unsolder the old cable and remove it

- *I decided to NOT cover the new cable in crymp-flex, to they can move more freely*

- Slide the new cable through the cable-guides near the hinge and drag it all the way through to the PCI-e connection to allow enough slack on the cable to solder it on

- Pre-solder the new cable and prepare the antenna solder area (remove the older soldering and add a small new lump)

- Solder on the new cable, shield first, then center core

- Retract the new cable through the cable guide

- Guide the Wi-Fi antenna cables around the hinge and into the PC

- I opted to route the cables the other side round the hinge than Lenovo originally did See the image

Step 7 — Try if the fix works

- Reconnect the cables to the Wi-Fi card

- Place the PC on a flat clean surface and make sure no foreing objects can interfere with the bottom of the PC

- Power up the PC to see if the fix has had the desired effect Remember to connect the power-cord, because this is the only way to start the PC after the internal battery has been shut off

- If you are happy - go on and re-assemble your laptop

Step 8 — Reassemble the thing

- I suggest to re-assemble the LCD hinge cap first so you can see if the cables are being pinched or overstreched in the hinge or the underside of the PC

- Replace the LCD bezel and Base cover in the order you see fit

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Step 9 — Adjust the "Wi-Fi autotuning"

- After the Wi-Fi is back up, I also ran the Wi-Fi Autotuning guide *Method 1* here https://support.lenovo.com/us/en/solutio...

I have no clue how long time this fix will last. I did my fox on the 27th Oct 2019.

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