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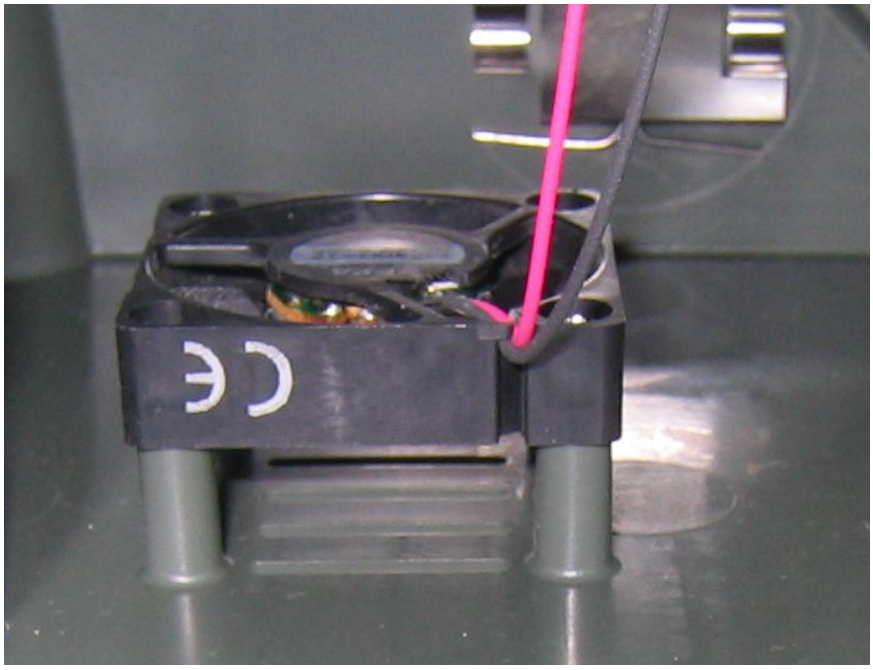
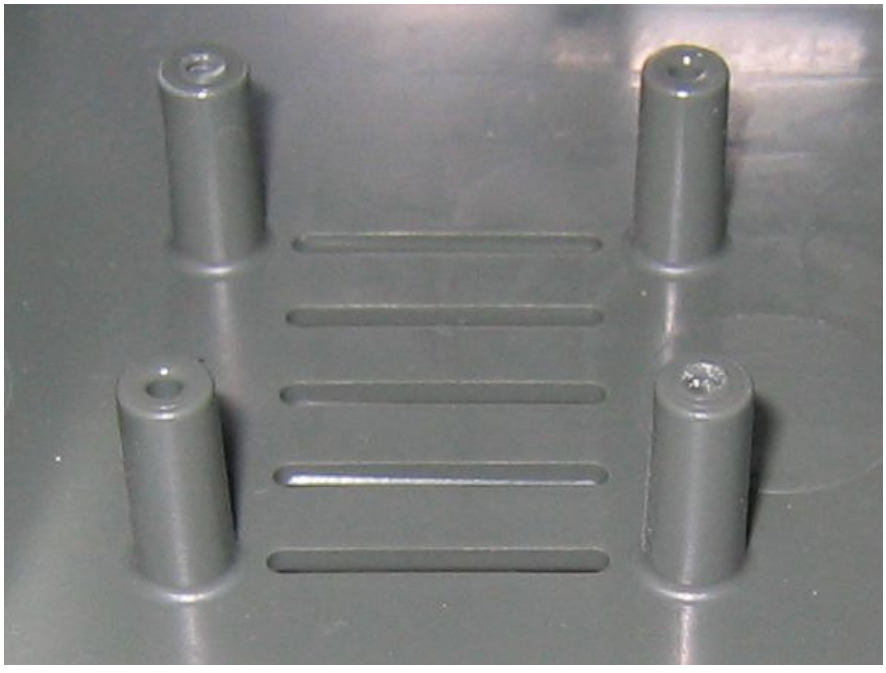
Introduction

When I received my W2014A I noticed that there where horrible spikes on channel 4 after using the DSO a longer time. My suspicion was that the components inside are running too hot. So I plugged off the DSO from power supply and opend the case (three screws ownly). A short “temperature measurement” with the little finger on the ADCs confirmed the suspicion (I nearly burned my finger while testing). Above the ADCs is a fan which should cool down the temperature. But indeed the fan is only whirling the warm air inside the case instead of sucking in fresh air from outside. The reason is that the fan is mounted on stilts over very small air slots.





The Idea

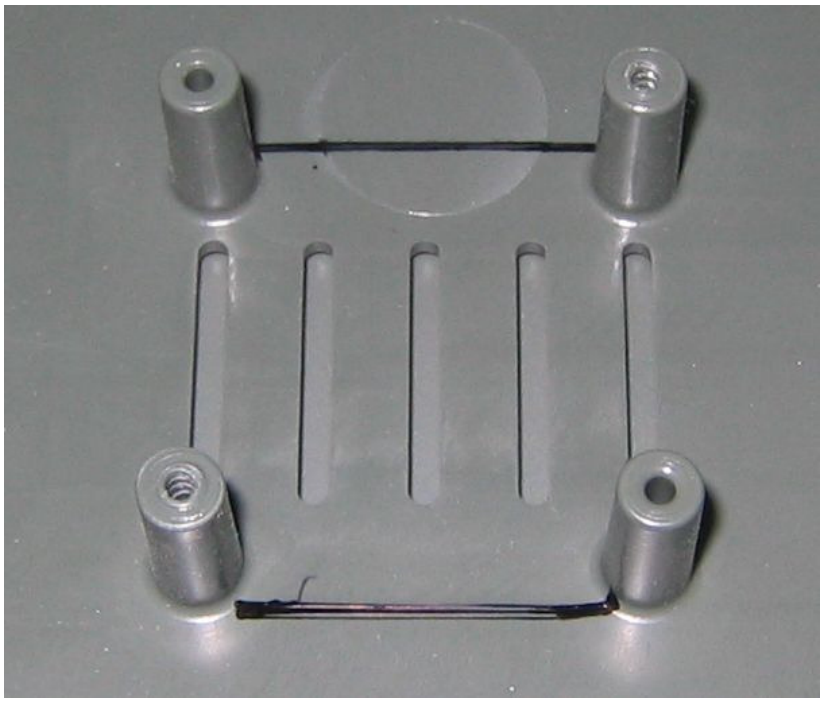
So what we need are greater slots in the case to optimize the air flow and we have to prevent that the fan gets air from beside. That sounds very simple – and it is! So lets look what we need for it.

What do we need?

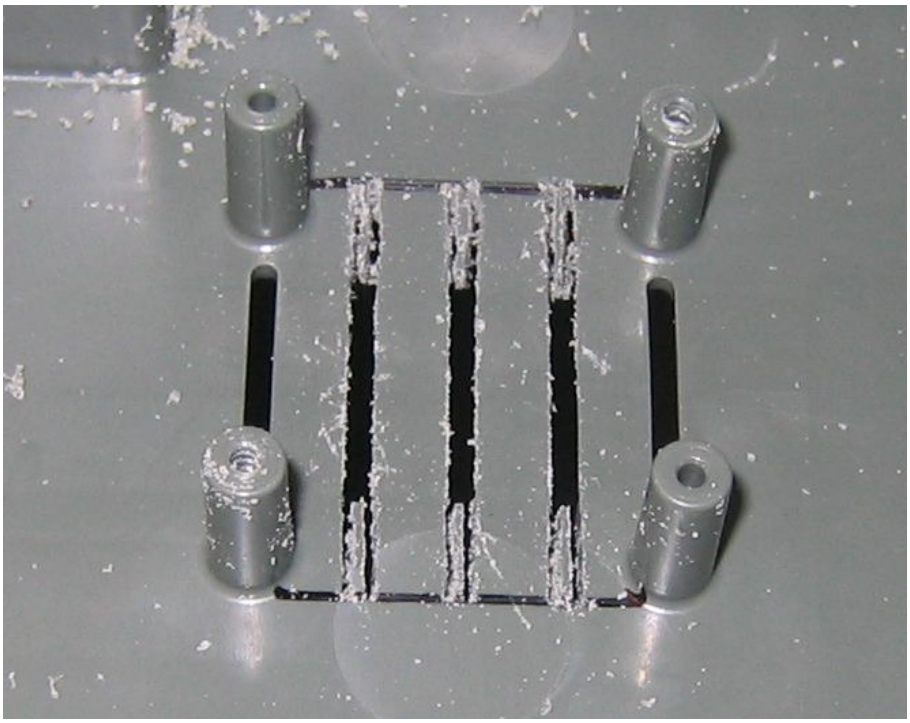
We only need a small file (like a nail file) and a little bit tape. But it may be helpful to have some more tools like this:

Modifiing the case

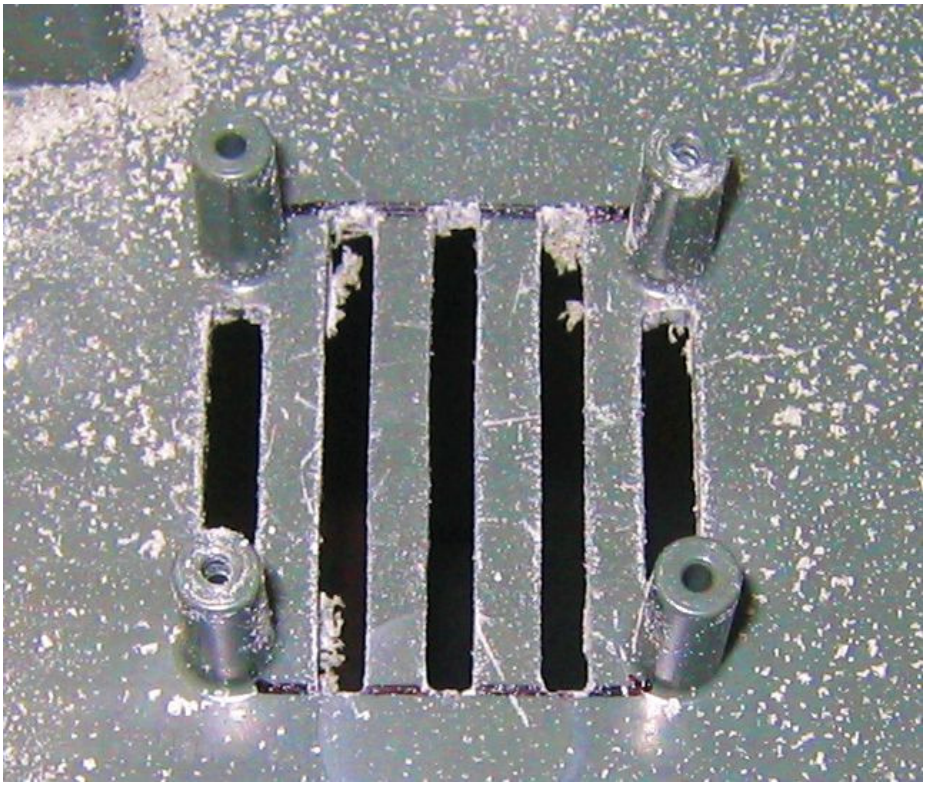
First we have to mark the new slot size between the stilts.



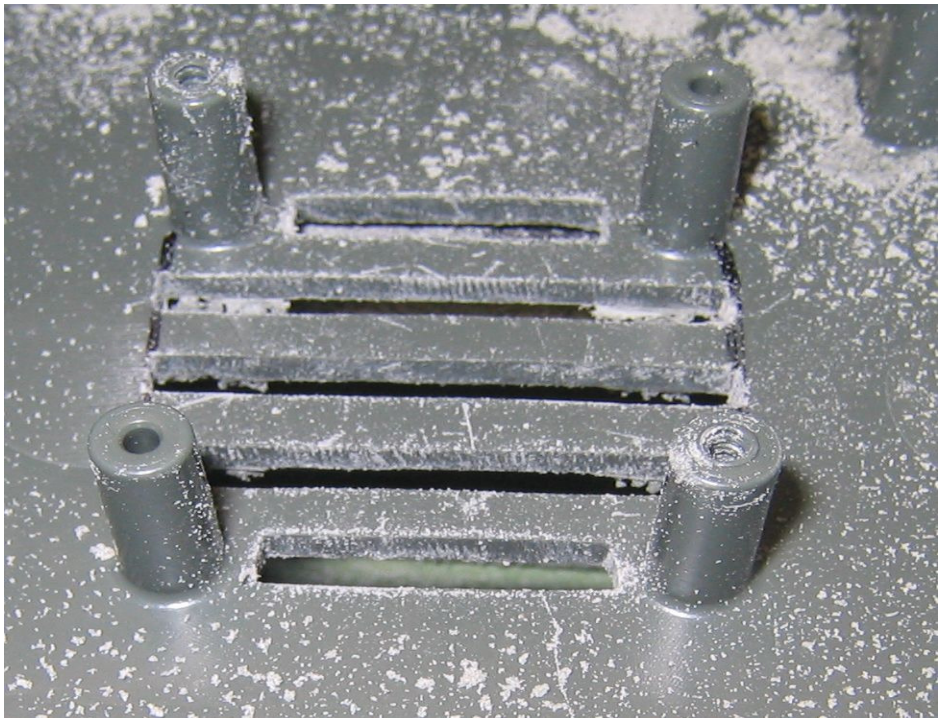
Then we use a saw to bring the slots to the new length. It is also possible to use a file for this.



After that we have to widen the slot with a file.

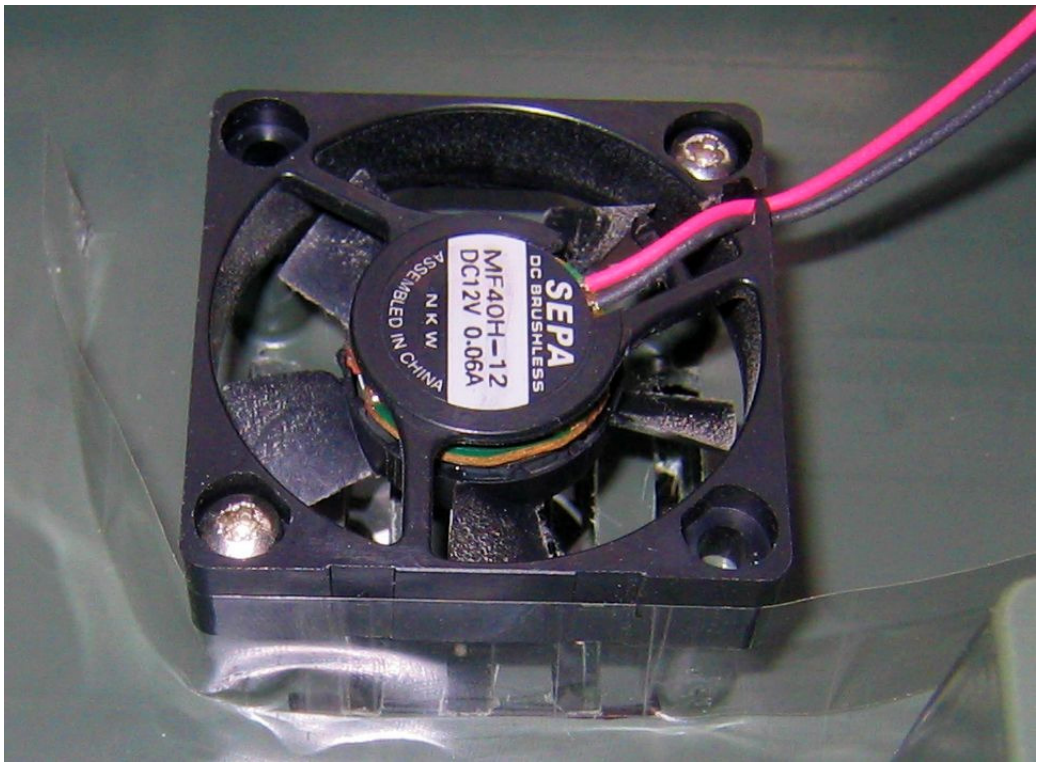


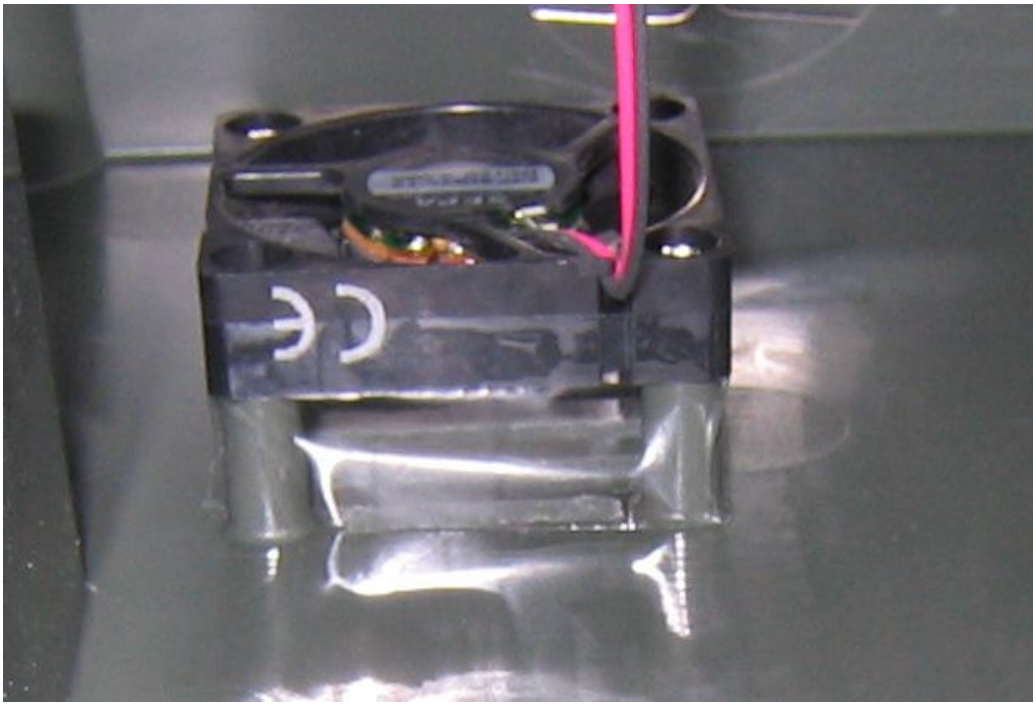
Clean the edges and the case from the shavings. You can use pressure air or a vacuum cleaner to avoid that some rests get into the DSO later.



Channeling the air stream

The slots are great enough now, so we only have to take care, that exclusively fresh air is sucked in. This can be realised very simple by building a jet with a little bit tape which we wind round the stilts after mounting the fan..





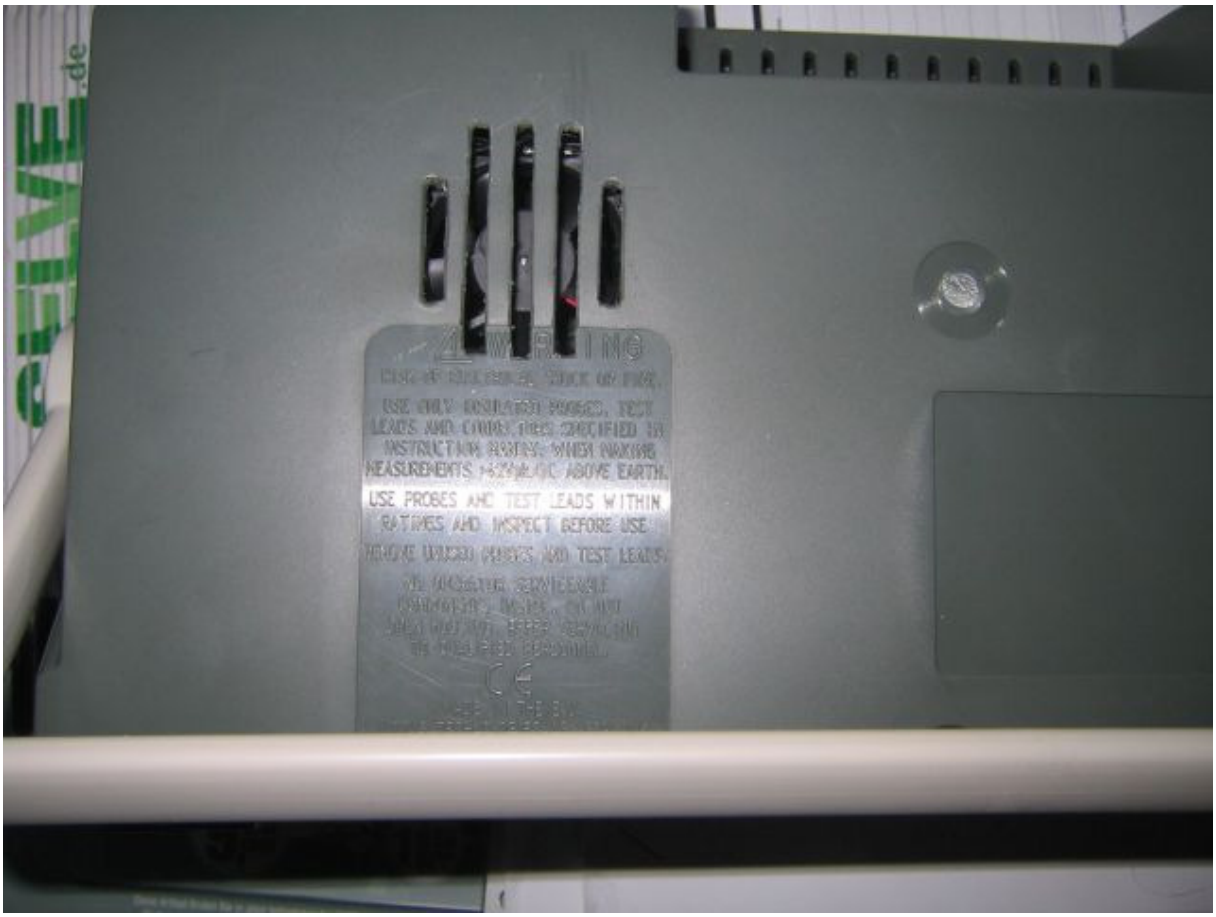
Conclusion

So that's it guys. Put together the case and start your DSO. You will find out, that there is coming out much more warm air on the upper side of the case now. In fact the spikes on channel 4 have disappeared even on continuous operation. It may be a little bit louder but therefore it has a stable thermal design now.

I recommend this modification to all owners of a 4 channel WELEC DSO. The 2 channel version is not so critical, because it is not running so hot as the 4 channel version. Nevertheless I made this modification on my W2022A also.

Best regards

Hayo



Backside of the DSO