Grüezi YouTubers. Here is the guy with the Swiss accent. With a new episode around sensors and microcontrollers.

Just a quick video for all ESP32 owners who wonder, which revision of the chip they own.

Up till now, Espressif released two chip revisions: Last September Rev 0 and in February, Rev 1. And there are rumors, that Espressif sells its old revision 0 chips cheap, and some of our manufacturers make a profit by selling them to us… So, let’s check!

The revision number is stored in an eFuse on the chip. Many other parameters are also “programmed” in these eFuse blocks.

What is a fuse in a microcontroller? Fuses are usually bits which can be set only once. This is, why sometimes people talk about “burning” fuses, not “programming” fuses. They are used to store data, which is chip-specific, but not the same for all chips. The MAC address is an example. Each chip has a different MAC address, and it keeps it till the end of life. So, during manufacturing, this address is “burned” into the fuses block.

And the warning in the ESP32 documentation is clear: You cannot undo this step! Different than with our ATTinys, where we still had a chance to undo the change with a special programmer using 12-volt programming voltage.

But today, we do not want to change a fuse, just read its content. So, no danger.

The revision information is in EFUSE\_BLK0\_RDATA3\_REG at the 16th place. The proposed formula to read the information is rather complicated: We read the whole register, shift it to the right by 12 places, and OR it with the number 7. The easier solution could be to just shift it to the right by 15 places. Then, the revision bit would stand at the last digit. Maybe Espressif has a particular numbering scheme in mind for the future. Who cares. We know, how we get the information. And here it is:

After testing my boards, I can confirm, that two boards from last year were, obviously, revision 0. Most of the ones bought over the last few months were revision one. The only exception was this part purchased from Aliexpress. So, I cannot confirm, that sellers still ship cheap old versions. At least not mine. Mostly fake news!

But now that we know the revision of our chips: What can we do with it? I do not know. So far, I did not find a lot of information about the differences between the two revisions. Maybe you know more? But it is always good to know, that we have the new version. Right? And at least, we learned something about fuses and bitwise operations.

I hope, this video was useful or at least interesting for you. If true, then like. Bye