In video #106 I introduced the Wemos shields. I like this concept a lot and there are even a few apps in iotappstory.com for this system.

I also used these shields for an introductory workshop in our local community. It worked quite well because each participant was able to build different devices like clocks or temperature sensors without soldering.

Last week, I got two new Wemos boards: The Wemos Di mini with the new ESP-12S module and a completely new D1 mini lite with an ESP8285 chip. So, I thought, I will do a short review of the two.

Let’s start with the D1 mini with the ESP-12S chip. This board has the same functionality as the old one. It has now version 2.2.0. It no more uses the ESP-12E module, it uses the new ESP-12S module. If we compare the two modules, the only difference is, that it has fewer pins. The pins opposite of the antenna are gone.

Most of us were anyway never able to use these pins, and if you designed PCBs, they just reduced your possibilities for routing. So, this is a good thing if you build your own PCB. For the rest of us, there is no difference.

If we turn the module, we see, that the CH340 chip is in a different position and that they replaced the two transistors by an IC. The LDO is still the same. So, also here, nothing special. I still do not like that they do not have a “flash” button. I think they could have used the space saved by the IC to add such a button. But it is as it is and we have to add a button shield including a capacitor if we need it.

All-in-all this is probably an optimization of manufacturing cost without effect on us users. So, you still can buy or use your “old” ESP-12 modules.

The other module, however, is completely new. It is called “lite” because it has only 1 MB flash memory. The rest of the specs seem to be the same as the normal D1 mini board. The build of the board, however, is completely different: It has no metallic shielding, and I think also, no FCC certification. And it has a different chip: Instead of our beloved ESP8266, it has its small sister, the ESP8285, which already has 1 MB flash on board. And it is a dollar cheaper than the normal D1 mini, at least in the Wemos store on Aliexpress. And here, I buy the original, because I think, Wemos deserves it. So, if you want to save a dollar, you can buy the lite version.

What is the disadvantage to doing without the 3M additional flash memory? If you use the Arduino IDE, you anyway never get more than 1 MB for your sketch. The rest is reserved for SPIFFS. If you do not use SPIFFS, you lose only 64kb with the ESP8285. Which is not a lot and most of us will never have any problems.

The next disadvantage is, that you have to add the board descriptions to your board.txt file. If you know how this is easily done. You go to the preferences menu of your Arduino IDE and click on the “preferences.txt” link. From there, you go to packages🡪ESP8266🡪hardware🡪esp8266🡪2.3.0 or -rc2. Here, you either replace the boards.txt file with the file from Github, or you add the board's definitions from the Wemos forum at the end of the boards.txt file. Save it and restart the IDE. Now, you can choose the d1 mini lite options. This has to be done only once and you find the links in the description.

For guys like me who develop for the Sonoff devices, there is another small advantage: Because the Sonoffs also have 1 MB flash, we can use this board to develop our sketches. I even built a small “Sonoff simulator” with the typical green LED, a white LED instead of the relay, and a button. With this, I can exactly simulate my Sonoff switch without the hassle to always take a switch apart…

And of course, if you want to develop a sketch for this tiny ESP8285 board, this is the perfect platform.

So, summarized:

1. The new Wemos D1 mini is mainly an internal optimization with no effects on the user
2. The ESP-12S module has fewer pins and advantages for people which design their own PCBs. For the rest of us, there is no difference.
3. The Wemos D1 mini lite is quite different from the normal D1 mini. It uses an ESP8285 chip and has only 1M flash. It is about 1$ cheaper, and it can be used to replace the normal D1 mini in most of the situations
4. It is an ideal development platform for ESP8285 boards and, together with as simulator, a development platform for the Sonoff switches.

I hope, this video was useful or at least interesting for you. Bye