



Superior Olimex ESP32-POE case (midi)

n ned14

[VIEW IN BROWSER](#)

updated 26. 7. 2024 | published 26. 7. 2024

Summary

Friction held case not obscuring any connector on the board designed to cope with heat from the PoE circuitry w/battery

[Hobby & Makers](#) > [Other Ideas](#)

Tags: [case](#) [esp32](#) [thingiverse](#) [olimex](#) [olimexpoeiso](#)

With all respect to everybody else who has supplied cases for [the Olimex ESP32-POE](#) on here, I don't like any of them, sorry! So I ended up making my own set of cases:

1. [The mini case](#), measuring 100 mm long, 35 mm wide and 35 mm tall, which contains the board only.
2. The midi case, this one, measuring 100 mm long, 60 mm wide and 35 mm tall, which can additionally take a 2400 mAh battery and an Olimex UEXT breakout board or any similar width (20-25 mm) peripheral.
3. The maxi case, measuring 100 mm long, 140 mm wide, and 35 mm tall, which is the midi case with an additional 75 mm wide thermally separated section for things like temperature sensors or relays. The thermally separated section has printed-in offset mounts for M2.5-M3 board screws. I chose 75 mm as the largest breakout board I have apart from relay clusters is 65 mm.

Each of those has its own Thingiverse item, linked.

All the cases have the same base and can reuse lids etc. Here were my design goals:

1. The Olimex ESP32-POE being a sub €20 PoE device runs hot at about 80 C if idling, and 120 C is expected if you're drawing all four watts it is capable of from ethernet. What I don't like about the other cases is they put plastic right up next to the hot power conversion circuitry near the ethernet port (see thermal photo attached). If that is PLA, it becomes a goopy mess, PETG will lose structural stability, and even ABS may creep. My cases put a full 10 mm ventilated air gap between plastic and hot components, spreading out the heat load, and I use a much thicker base than some other cases.
2. Sometimes you want to drive self tapping screws into the case to hold in place breakout boards and sensors, and for that you need a good thick base. I gave mine a 4mm base with regularly spaced countersunk holes for screws to fix the case onto something.
3. The other cases don't expose every port and connector of the Olimex ESP32-POE for use. Often the battery connector is obstructed, or the USB port, or even the soldered breakout pins at the sides. My cases expose **everything** the board has in full, unobstructed. I even put in a hole so you can see the ethernet leds.
4. The ethernet port on the ESP32-POE has spring metal around its sides, and I saw few other cases leveraging that. Mine uses those to provide back pressure holding the board's wifi antenna into a slot at the back of the case, thus holding the board firm. It also means to get the board in and out of the case just needs a little push and a pop.

These cases are sized for Rev. L of the Olimex ESP32-POE, so the > 2021 edition with the lower heat PoE circuitry. Even then, it has an approx 41% efficient circuit if powered off the PoE, so at idle approx 0.8 watts of heat will be generated. Me personally, I wouldn't risk normal PLA on that, you'd better use a special PLA more stable at high temperatures. PETG starts getting a bit soft after 50 C, but should hold its integrity until 65 C. I did test printing this case in PETG, and it came out lovely. ABS is obviously the best choice if your printer can do it, that should hold its integrity until 80 C. However there is slightly more shrinkage with ABS.

I sized this model for PETG with it being a touch tight with ABS as a result. It's no showstopper, just be prepared to be a little forceful if you printed in ABS. The pictures above are for white ABS, and I can confirm the board can be inserted and removed in an ABS print with only minor hassle. The case thicknesses are a touch overkill for ABS which is much stronger than PETG, but for PETG they are spot on - thin enough you're not wasting material, but no more.

The lid's holes were designed so an Olimex UEXT cable can be put through them without issue. The lid has a good tight fit in the mini case, and I gave it 2 mm thickness so it wouldn't suck if printed in PETG.

I personally think these cases are pretty much perfect, but I look forward to seeing what remixes you all do. Enjoy!

Print Settings

Printer Brand:

Anycubic

Printer:

Kobra Go

Rafts:

No

Supports:

Yes

Resolution:

0.2

Infill:

20%

Filament: YOYI ABS White **Notes:**

All bright white ABS filament is trickier to print than other materials, but with 230 C and 5mm of brim I get success about 85% of the time now. Typical issues are clogged nozzle or bed detachment, the Kobra Go is a great printer for the money but ABS is at its limit.

PETG and PLA are 99% reliable and I tested a PETG print of this case as well as it went superbly. I wouldn't recommend PLA for this case, the Olimex ESP32-POE gets hot, see above.

I think you need a bit of support just in the middle where the bridge span is a bit too wide and there is a bit which juts out completely unsupported. I put in two holes at the bottom to aid a knife getting in there to cut the support away.

Post-Printing

A sharp knife to remove any print artifacts and the middle bar support and that's it. It prints very well in ABS if it prints at all, very little postprocessing needed.

If printing in PETG the usual PETG hair removal is needed, but also very little work needed.

If you find it too hard to insert the board, trimming the depth of the middle bar by a little can be useful.

How I Designed This

Meshmixer, and I supply the original design files so you can edit them if needed.

Category: Other

Model files



olimex-esp32-poe-case-midi.stl



olimex-esp32-poe-case-midi-lid.stl

Other files

olimex-esp32-poe-case-midi.zip

[Find source .stl files on Thingiverse.com](#)

License Θ

This work is licensed under a
Creative Commons (4.0 International License)



Attribution-ShareAlike

- ✗ | Sharing without ATTRIBUTION
- ✓ | Remix Culture allowed
- ✓ | Commercial Use
- ✓ | Free Cultural Works
- ✓ | Meets Open Definition