Raspberry Pi5 case for use w/NVME board, clock battery and All-in-One Cooler

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VIEW IN BROWSER

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Summary

Case for the Raspberry Pi 5 equipped with the NVME add on board (not hat) and the all-in-one cooler.

Hobby & Makers > Electronics

Tags: nvme raspberrypi5 allinonecooler

I couldn't find a design or case available for the Raspberry Pi5 if you had the add-on board for an NMVe drive (not the hat) equipped nor for one with the dedicated all-in-one cooler (not the active cooler) so I made one. This is what I came up with. I also added the clock battery, stuck to the bottom of the NVMe board, to my pi5. I'm satisfied with the results and hope somebody else finds this case it useful. It does require additional parts, namely 4x 15mm standoffs (one end male the other female) w/ bolts. All the connection ports are accessible, has slots in the top for camera/display ribbon cables. The area over the GPIO pins is slotted and removable so it can be fairly easily cut out if desired. The power button sits flush to the case but is easy enough to press, I just prefer such buttons not stick out where they are easily pressed by accident.

The SD card is not really easily accessible. I've found that to be true of any Pi case really so I didn't bother even trying to make accessing the TF a priority. I use a TF card extender when I need to utilize an SDXC card. The one I use is relatively cheap and it works great. It's also the push in/push again to eject type. I like it both for the eject function and because it's short/small so not bulky for storing. From Amazon.com:

https://www.amazon.com/dp/B07WWVBK8V?psc=1&ref=ppx_yo2ov_dt_b_product_details

For the standoffs, I used some from this kit on Amazon.com:

https://www.amazon.com/dp/B0CKBWQSNY?ref=ppx_yo2ov_dt_b_product_details&th=1

I don't know if this case will work with the Active Cooling unit, its fan placement might differ from that of the dedicated all-in-one cooler. This is the cooler this case was made for use with:

https://www.pishop.us/product/dedicated-all-in-one-aluminum-cooler-for-raspberry-pi-5-pwm/

I tried to design the case upper so that the airflow from the fan was directed along and kept in the heatsink area. So far I have had no temperature issues but I also haven't tried overclocking my Pi5. If you overclock, your results may vary... The hexagonal holes seem to be adequate for the cooler and for some passive convection cooling of the NVMe.

I wouldn't have bought standoffs for this project alone but I keep them on hand for other projects so used what I had. The kit is actually just about as cheap as buying the few standoffs needed, plus it comes with 4 sizes in both male/female and female/female for each, includes washers and three lengths of M2.5 bolts. All nylon so no worries about shorting anything, though that's not really an issue here it can be on other projects. I used bolts from this set for the case bottom and the bolts from the NVMe kit on the case top (just looked better imho). The short bolts from the NVMe kit aren't long enough for the case bottom due to my adding space in the bottom for the clock battery.

Recommended filament: PLA or PLA+

I personally used Elegoo Rapid PLA+, I like their filaments and the rapid stuff works well in faster printers. I've had really good results with it in my Bambu Labs X1C and Voron 2.4

If your bridges come out well enough, you can print without supports. Personally, I used supports for the case upper but only painted on supports

to the two horizontal bars between USB ports, the bolt recesses don't need supports. The lower needs no supports.

I printed the case with a .16mm layer height but the case was actually designed for a .20mm layer height.

No warranty is expressed or implied. Use this case at your own risk. By downloading and printing this case you accept all liability for its use. Sorry I have to add that but in today's litigious society it has become impossible to trust in the integrity of my fellow humans. I hate that fact and truly wish things were different.

I'm no expert by any means, I can barely design a cube. The items I design are for my personal use but very rarely I do come up with a working design that I think other people might like or be able to use so I try to share those designs.

There is a hole in the top of the case, above the power LED. I just take a short piece of clear filament, straighten it out, heat up one end so it's slightly soft and push it through the hole from inside the case. After it has cooled, I trim it flush to the top of the case and trim the inside end a bit at a time until it is just above the LED when the case is assembled (about 14 or 15mm from the inside of the case top to the end of the clear filament). It's not as good as a piece of fiber optic would be but it does transmit the light from the LED a bit. It's not necessary to add this but the hole is there if you want to try it.

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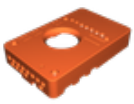
Model files

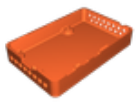
pi-5-case-upper.step

pi-5-case-lower.step

pi-5-case-power-button.step



pi-5-case-upper.stl



pi-5-case-lower.stl

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pi-5-case-power-button.stl

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