RackPi HD (Higher Density 2U)

Blind Maker

VIEW IN BROWSER

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Summary

UPDATED 2022/05/14: By request, uploaded Keystone inserts for "Classic" (DAP-based) RackPi. UPDATED 2021/12/26: Lots...

Gadgets > Computers

Tags: mount raspberry pi rack nvidiajetson raspberrypi rackmount thingiverse keystone 2urackmount rackpi

UPDATED 2022/05/14: By request, uploaded Keystone inserts for "Classic" (DAP-based) RackPi.

UPDATED 2021/12/26: Lots of tweaks and new accessories. Nothing incompatible (i.e., no reason to reprint anything you're happy with).

I started down the rackmount home lab journey this summer and was looking to mount my existing SBC's (Raspberry Pi 4, Jetson Nano and Jetson Xavier NX). I found most of what I wanted in SliderBOR's RackPi project. But, I didn't have access to the DAP mount. So I looked at wilimis' printable rack, but I couldn't get the clever connectors to work and I wanted something a bit more sturdy. And I needed a bit higher density (12 slots instead of just 10) to support my needs/plans. SO, I made my own "similar" stuff.

Here's what I've got:

1. Fully printable (except M4 screws/washers/nuts) 2U Rack Mount with 12 spaces for 88mmx36mm accessories
2. Fully printable "classic" 2U Rack Mount (DAP compatible) with 10 spaces for 88mmx44.1mm accessories (backwards compatible...I've not printed this, but it SHOULD work)
3. A few Raspberry Pi 4 accessory mount options (1x36mm slot)
4. A Raspberry Pi 3B/+ accessory mount per request (1x36mm slot)
5. A few Jetson Nano/NX accessory mount options (3x36mm slot)
6. Mount for 80mm fan in rear w/ wire passthrough (108mm). I have 3x of these spanning the rear which run quiet and cool.
7. 2x, 3x and 4x standard Keystone accessory mounts (1x36mm slot)
8. 1-, 2- and 3-slot blanks (36mm, 72mm & 108mm)
9. 1-, 2- and 3-slot "mesh" blanks (36mm, 72mm & 108mm)

Pi 4 and Jetson accessory mounts include options to allow for the following (or similar) front-facing MicroSD extension (fits pretty snugly, but a little hot glue will be a little more secure):

https://smile.amazon.com/dp/B07WWVBK8V

Pi 4 accessory mounts include options to allow for the following front-facing HDMI passthrough + converter cable:

https://smile.amazon.com/dp/B01N33JZML https://smile.amazon.com/dp/B07H7BYPV6

Using these 80mm Noctua fans:

https://smile.amazon.com/dp/B00KF7MVI2

I hacked together a module to upconvert 5v USB to 12v. If that's not in your wheelhouse, then something like this will be easier:

https://smile.amazon.com/dp/B07DXMF32M

For the rack, you need 2 ears and 4 segments (or 6 small-bed ones). The "big" segments are 216mm wide (220.5mm for the "classic"), so even an Ender 3 sized printer should work. The "small bed" variant is only 144mm wide, so should work for most. Note that I didn't design a small bed "classic" because 10/3 isn't a happy number.

> Note that you probably could create a 1/2 & 1/2 mix of HD and Classic by combining 2 HD segments, 2 Classic segments, 1 HD ear and 1 Classic ear. If that floats your boat...

I printed the mount components in PETG. It's almost strong enough for me to stand on by itself and IS strong enough to stand on when you add the

accessories...though, uhh, don't. :) I personally wouldn't use PLA for this because of it's propensity to sag over time. PLA should be okay for accessories, though obviously if your rack or components are hot, you could encounter issues.

Print the segments flat and the ears standing vertically for the best strength. Accessories should be printed face down. Nothing should require supports, though the cheesy NVidia logo will require a few mm of bridging and there are a few 45-degree overhangs, so set your fan speed high enough to accommodate this.

Assemble the ears and segments using M4 screws, nuts and washers. The orientation of the screws+washer and inset nuts will be different top vs. bottom. This allows a single ear design and a single segment design.

Accessories all mount using M3 screws and an inset M3 nut (nut is probably overkill). Mounting all 12 might be quite tight depending on your printer tolerances.UPDATE: I've adjusted tolerances on most accessories so they should no longer be too tight.

Jetson self-taps in using M2.5 screws. Obviously don't over-torque any of the self-tapping screws lest you need to find yourself a nut.

Pi uses M2.5 screws + Nuts. The "blank" and "oled" versions don't have insets for the nuts. You can self-tap these with M3's or just put the nuts on the outside. Not a huge deal.

As noted, I've not tested the rack for the "classic" RackPi. But I'm relatively confident in it. Nor have I tested the OLED screen. I just added in the OLED one to see if I could make it fit in the HD space. If you want the full RackPi experience (with LED and Button and OLED), I think I'd suggest sticking with the classic. But I've included a "blank" if anyone wants to take a stab at doing something more exciting with this form factor.

Enjoy! Let me know if you have issues, questions or constructive feedback.

Category: Computer

This remix is based on

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by ptyork

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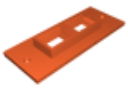
Model files



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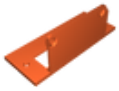

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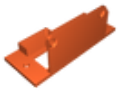

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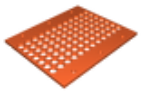

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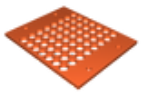

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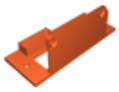

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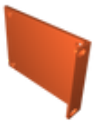

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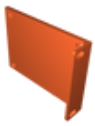

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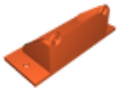

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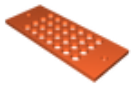

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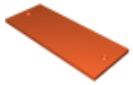

rackpi_hd_-_blankx1.stl

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