Printables
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Simple Modular Sub rack (Raspberry pi, pikvm, etc)

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VIEW IN BROWSER

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Summary

A cheap, easy to make system for mounting several smaller components into a 19" rack

Gadgets > Computers

Tags: raspberrypi rackmount 19inch 19inchrackmount pikvm 19inchrack visionfive2 brixpro

I built this after wanting to mount a bunch of single board computers and mini PCs into my rack, but not finding any solutions. There are 2U modular rack carriers, but nothing in 3U, which was more suitable for the kind of stuff I'm mounting.
To build this you'll need two 450mm lengths of 1010 extrusion. I used Makerbeam for this, which comes in 300mm and 150mm lengths, I just used one of each and used a straight length to connect them. You can also just buy a single 1000mm length and cut your own, which is probably cheaper.
You'll also want 24 t-nuts, a bunch of M3 5mm screws and a variety of heat set inserts if you're using the included carriers (Everything is m3 except the pi, which is m2.5). I've noticed some inserts have different dimensions than others, I'm using the CNC Kitchen guide for spacing, though some

cheaper ebay inserts seem to be a bit bigger. They'll still fit, but you might need to go a bit slower.
Note that the ears in the picture don't quite fit rack spacing, I uploaded fixed models and have confirmed they fit now, though the tolerances are somewhat tight. Let me know if you have issues.
To build, just print two ears, then attach the 450mm lengths to the tabs on the ears with t-slot nuts. It should be pretty self explanatory. m3x5 screws should do the trick, but if your parts shrink too much a washer may be useful to ensure a tight fit.

Included plates

- Raspberry pi B
- Starfive VisionFive 2
- Gigabyte Brix Pro
- Geekworm pikvm-a8 (With an additional USBC plate to bring the OTC header to the front; any will do here but you'll want to make sure you have clearance since the OTG cable points up!). I've also included a blank plate with a cutout for the oled if you have room for it; just hot glue it on for now.
- 1 and 2u blank plates.

Note that I'm pretty new to fusion still so these plates aren't perfect, and there are probably better ways to make them. I'm posting these in hopes that it inspires a larger ecosystem of plates and variations (For example, raspberry pi plates with support for HDMI side cards or keystones seem like low hanging fruit)

Designing your own plates

Critical dimensions are just:

- 132mm tall
- 44.5mm wide per rack unit. This is intentionally a bit small to allow some tolerance for weird printer shenanigans.
- holes are 3.8mm dia, 5mm from the top/bottom
- 10mm keep out from the top and bottom for the 1010 extrusions. Try to leave a bit more if you can, since the edges will have an additional 10mm for the ear tabs.

Let me know if you have any questions!

Model files

ear.stl

Rack ears (Print two)

1u3h-pi-single.stl

1u3h-blank.stl

1u3h-oled-mount.stl

2u3h-blank.stl

2u3h-brix_rpi-mount-3uv-v3_body2.stl

Brix support arms (Print 2)

1u3h-pci-pikvm.stl

1u3h-vision52.stl

2u3h-brix_rpi-mount-3uv-v3_body1.stl

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