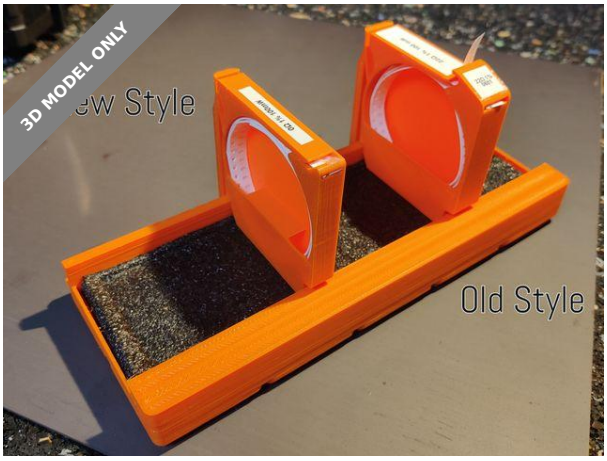

Gridfinity x SMD Magazine

C CmdrEmily

VIEW IN BROWSER

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Summary

Convenient access and organization for your SMD components.

Hobby & Makers > Electronics

Tags: gridfinity

Tired of endless bags of 0603s and SOD123s with no order to them? Looking to speed up your assembly by bringing order to your components? Look no further! :)

Introduction

This model is a heavily reworked version of Robin Reiter's SMD Component Magazines: https://hackaday.io/project/168275-smd-component-magazines.

It's different from the original in the following ways:

- The length of tape that is peeled is greatly shortened so less components risk falling out and getting lost.
- Only the compliant clip design is provided as I've deemed that to be superior in every way.
- I've added a lip on the side to prevent the component tape from sliding out.

- I've made it easier to load the tape by opening the side where you can feed the plastic wrap through.
- I've introduced parameters in the source file for the magazines that make it easier to adjust the mouth to fit thightly to the tape to prevent components falling out.
- Unfortunately the nice little lip for the short component label had to go to make these features possible.
- I've adapted the rail to work with #gridfinity baseplates.
- The width of the magazine adapts closer to the width of the tape, allowing you to fit more magazines on a rail.

Ok for real tho, what is it? The original author of the design that this is based on shows this excellently in his YouTube video:

Instructions

SMD Casette

You're expected to use the parametric source file for Fusion 360 to adjust the dimensions of the component tape and printer tolerance parameters to get a tight and smooth fit on the tape. I'm not going to be able to provide STLs for all tape dimensions.

Recommended settings:

- Material: PLA
- Print Bed: Smooth PEI
- Orientation: Laying flat on the back.
- Brim: No.
- Perimeters: Minimum 2.
- Infill: None.
- Layers: 0.3mm for speed.

Interesting parameters in parametric source file:

- tape_thickness/width: Adjust these to match measured values of your component tape.
- printer_tolerance: Adjust this to match the measured accuracy of your printer. Will add extra space around the mouth of the casette to accomondate inaccuracies.

Note: Even though these casettes are heavily reworked from the original, they are still compatible with the original rails, and the rails included here are compatible of the original casettes.

OG Rail

If for some reason you don't like the Gridfinity rail, you can use the OG Rail design instead. It has compartment in the back for some ballast to make it not move around on your desk. Fill with whatever you have, and hot glue the lid on the back.

The included STL is 200 mm long and requires a sheet of foam that is 59x200mm and is a little bit thicker than 6mm to provide some force to push the casettes into the rail so they have no movement. I recommend getting some small rubber feet to stick on the under side to make it stay put even better.

Recommended settings:

- Material: PLA.
- Print Bed: Smooth PEI
- Orientation: Standing upright.
- Brim: Yes.
- Support: No.
- Perimeters: Minimum 2.
- Infill: 5-10% rectilinear.
- Layers: 0.15 - 0.3mm

Interesting parameters in parametric source file:

- rail_length: The outside length dimension of the rail.
- rail_angle: Adjust the tilt angle to your choosing.
- rail_dividers: Adjust this to have enough dividers in the ballast compartment to support the foam and the loaded magazines.
- rail_thickness: Adjust this if your layer height goes thicker than 0.3 mm.
- printer_tolerance: Adjust if the fit of the lid to the back is poor.
- foam_thickness: Adjust if you want to use a different foam thickness, make slightly thinner than the actual foam.

Gridfinity Rail

You don't need to print both this and the OG rail unless you want to have them for different uses.

The included STL is 2x5 gridfinity modules making it require a printbed of 209.5x83.5 mm. It requires a sheet of foam that is 207x59 mm and a bit thicker than 6mm to provide some force to push the casettes into the rail so they have no movement. There's also space for up to 40 (but you probably don't want that many) 6x2mm round neodymium magnets in the rail, as is common for gridfinity modules.

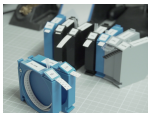
Recommended settings:

- Material: PLA.
  - Makes the supported areas come out cleaner than PETG.
- Orientation: Flat, as oriented.
- Brim: No.
  - The model is prone to warping but PLA on Smooth PEI sheet with correctly tuned first layer should be fine.
- Print Bed: Smooth PEI.
  - If you don't have a smooth PEI bed or similar bed with good adhesion for PLA, add a decent size brim to prevent warping. The clean-up of the underside becomes a bit annoying though.
- Support: Yes, Organic.
  - Note: Organic support is only available in Prusa Slicer 2.6.0 Alpha or later.
  - Classic support intersects the model wierdly in Prusa Slicer 2.5.
- Perimeters: minimum 2.
- Infill: 5-10% Rectilinear.
  - The floor where the foam is should be supported.
- Layers: 0.15 mm.
  - Lower layer height makes the lips on the rail come out cleaner as they are at a slight angle.

Interesting parameters in parametric source file:

- n_y: the length of the rail in Gridfinity units.
- foam_thickness: Adjust if you want to use a different foam thickness, make slightly thinner than the actual foam.

This remix is based on



SMD Component Magazines

by robin7331

Model files

Parametric Source Files (Fusion 360) 2 files

gridfinity-smd-cassette-rail-v10.f3d

smd-cassette-system-v11.f3d

SMD Casettes

1 file

cassette-6x07mm-tape.stl

Fits common 0603 component tape.

Gridfinity Rails

1 file

gridfinity-smd-mag-rail-5-modules-long-6mm-foam.stl

Fits on MK3s print bed diagonally. Use PLA on Smooth PEI sheet for bed adhesion.

OG (non-gridfinitiy) Rail - 200 mm

2 files

og-rail-lid-200mm.stl

og-rail-body-200mm.stl

Print vertically, standing on side. Use brim.

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