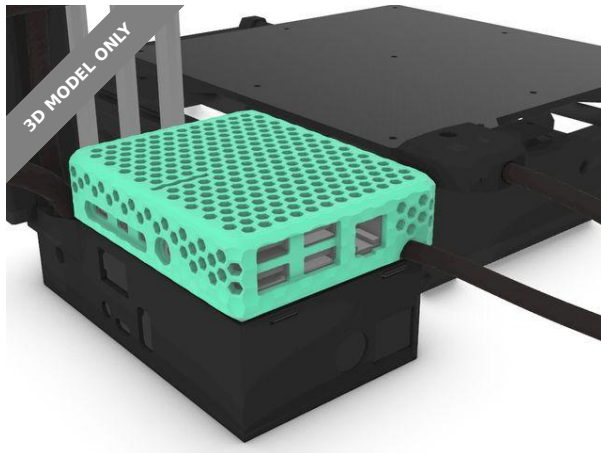




Raspberry Pi Z-Box | Integrated 4B Case for Prusa MINI

 the freewheeler

[VIEW IN BROWSER](#)

updated 7. 1. 2022 | published 24. 4. 2021

Summary

An RPi case that attaches seamlessly to your MINI at the z-axis base and replaces the lid of the stock electronics box

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RPi 'Z-BOX'

The RPi Z-Box, designed for the 4B, is the first integrated case for the Raspberry Pi that attaches seamlessly to your Prusa MINI/ MINI+. The Z-Box attaches at the base of the z-axis and replaces the lid of the stock electronics board enclosure using the same mechanism for attachment.

[See here for the 3B / 3B+ version](#)

The Z-Box relieves strain by rerouting the MINI's cables in a more natural, organized manner and also provides space to route additional peripherals. You also have the option to mount a fan, which clips directly in to the lid's hexagonal perforations.

NOTES

• PRINTING

- **Design is 3 pieces: Base, Body, and Lid**
 - **All are interchangeable, so choose any mix of variations**
 - The base is mostly hidden, but I made it it's own piece so you can print it in black to match the stock enclosure, if you choose
- All parts designed to print without supports, brims, or rafts
- PETG or PLA recommended
- .20mm resolution for 'Base' & .15mm (or finer) for 'Body' & 'Lid'
- I suggest increasing perimeters on 'Body' portion to make the walls effectively solid
 - Some have still chosen to add supports for the perforations, though I didn't use them in any of my iterations

- If your printer is having issues with the lid detail, I have added a flat option ('Hex' only)
- Update: Apparently some of the lid options are opening in the slicer upside-down. If you have this issue, be sure to flip it so that the textured surface is on top.
- **Hardware**
 - 4 x M2.5 x 10mm bolts (for connecting the Pi)
 - Use 12mm bolts if attaching with a nut - works with M2 fasteners
 - Holes can be drilled out to fit M3
 - Re-use the bolt from the stock lid
- **Fan Mount (See [here](#))**
 - 30x30mm fans only
 - Two options: 10mm & 7.5mm (or smaller)
 - Fits only 'Hex' lid options
 - Attaches by friction fit, wherever you want to put it
 - **Update:** 40x40x10mm fan mount added
- **Clearance Concerns**
 - The case cannot grow taller, due to conflict with the extruder motor and hotend cable, nor can the Pi move lower, due to conflict with the power jumper wires below
 - GPIO Pins
 - Depending on manufacture, your wire connectors may be ~1mm too tall.
 - You can either clip a bit of plastic off the connectors' top/bottom (like I did) or use the lid version with an open slot to freely access all GPIO pins (see fan link above)
 - 15mm heat sinks will not fit. I recommend using a shorter heat sink and/or a fan
 - Be sure to choose a fan size that will not interfere with the height of your heat sink
 - Filament sensor fits without issue
 - Bondtech extruder fits without issue
 - Only other fitment issues I have heard have been due to warping, so be sure to allow the print to fully cool before removing from bed

Don't forget to check out the assembly instructions, found [here](#).

Please message me with any thoughts about design improvements that could be made. Thanks!

Your donations make my work possible - they are very much appreciated!

Contact: freewheelerdesign@gmail.com for commission inquiries

Designed using Rhino3D with Grasshopper

Model files



BODY

2 files



rpi-z-box_hex-body.stl



rpi-z-box_solid-body.stl



BASE

1 file



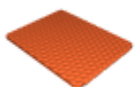
rpi-z-box_base.stl

☐ This is the only file you MUST print.



LID

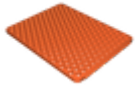
7 files



rpi-z-box_solid-lid.stl

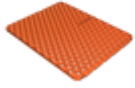


rpi-z-box_hex-lid.stl

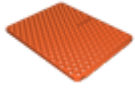


rpi_z_box_hex_lid_flat.stl

☐ Modified lid to reduce level of detail for printing with low print resolution



rpi-z-box_hex-cam-lid.stl



rpi_z_box_hex_cam_lid_flat.stl

☐ Modified lid to reduce level of detail for printing with low print resolution



rpi-z-box_solid-gpio-lid.stl



rpi-z-box_hex-gpio-lid.stl



FAN

3 files



rpi-z-box_30mm-fan-attachment_75mm.stl

☐ Fits fans up to 30x30x7.5mm



rpi-z-box_30mm-fan-attachment_10mm.stl

☐ Fits fans up to 30x30x10mm



rpi-z-box_40mm-fan-attachment_10mm.stl

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