PROJECT:

North Pi

Table of Contents

![Fractal logo]

Case specifications

Dimensions: 105 x 50 x 96 mm (HxWxD)

Material: Based on your preference.
                               (We recommend PLA + wood + acrylic.)

Motherboard compatibility: Dimensions: 88 x 58 mm (3.5" x 2.3") SBCs
                               Tested with Raspberry Pi 5 and
                               Radxa Rock 4C Plus.

Front fans: Up to 2 x 40 x 10 mm fans

Required hardware
- 3D Printer or access to 3D printing service.
- Screws:
    - 13 x M2.5 threaded inserts, outer diameter 3.5 mm (other diameter will require altering the holes for the inserts) + tools for inserting them.
    - 9 x M2.5x4 (-6) for case assembly.
    - 4 x M2.5x4 (-6) or stand-offs for motherboard assembly.

- Screwdriver.
- Glue.

Optional hardware
- File or sanding paper for cleaning up print.
- Wood strips (for authentic look) and shaping tools for those
- 2 x 40 mm fans (max 10 mm thick). Check the documentation of your specific SBC on what voltage to use.
- Paint and paintbrush/airbrush.

Case parts
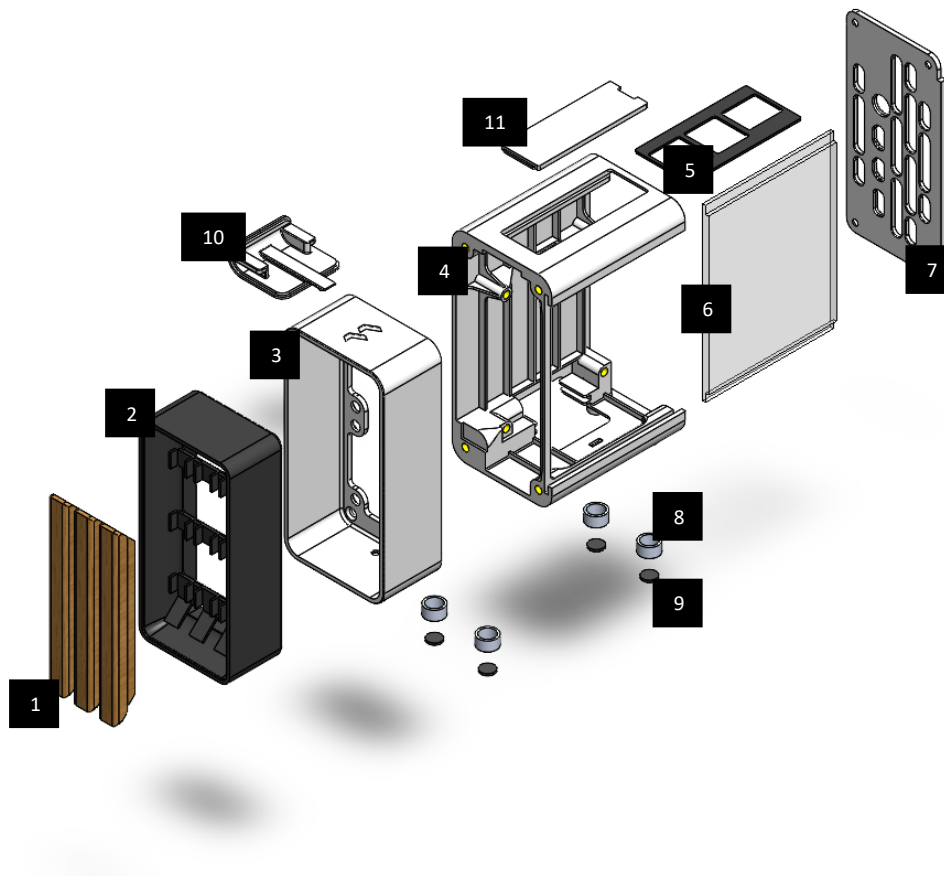
The image in the description for each part shows the recommended print orientation.

1. Wood Strips

2. Front Inner Frame

3. Front Frame

4. Main Body

5. Top I/O Shield

6. Right Side Panel

7. Rear Panel

1. Wood strips

File name: Front-bar.stl

Number of copies required: 3
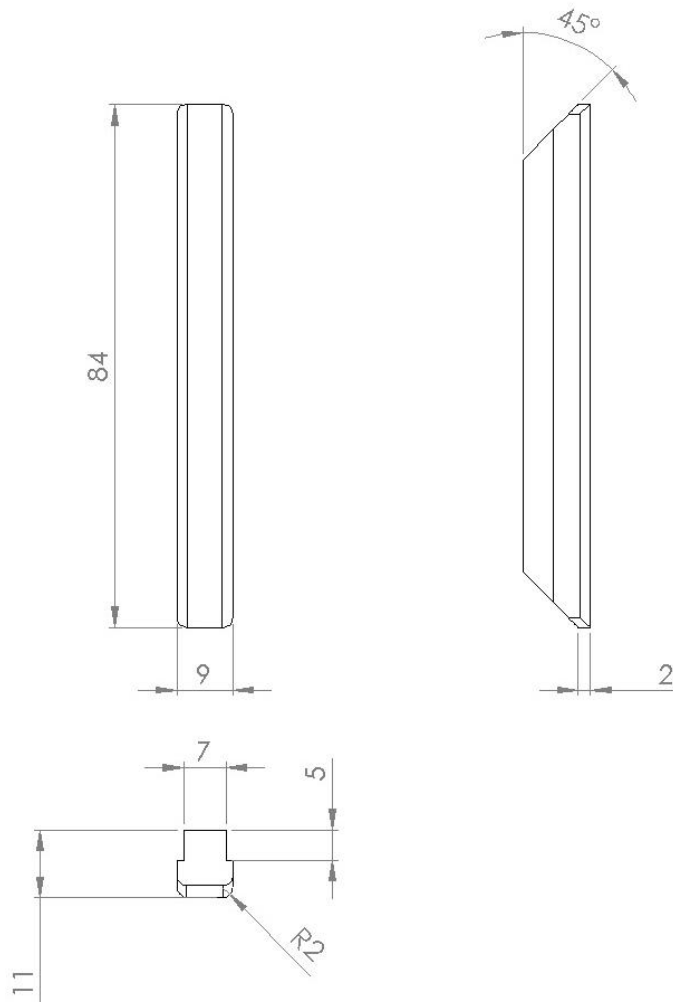
Supports needed: Yes

Recommended color: Oak (white version) or Walnut (black version)
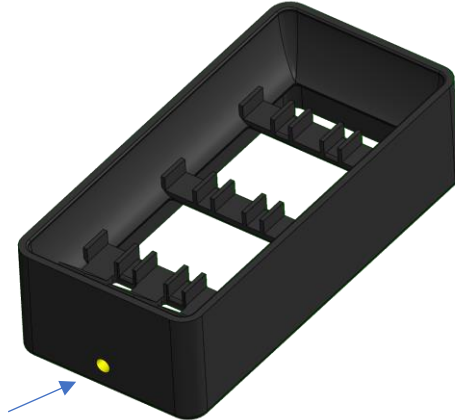
Description:
The front bars can be either 3D-printed and painted or cut from real wood.
The three bars are glued in place on the front inner frame (see page 6).
For real wood, please use these dimensions:

2. Front inner frame

File name: Front-bar.stl
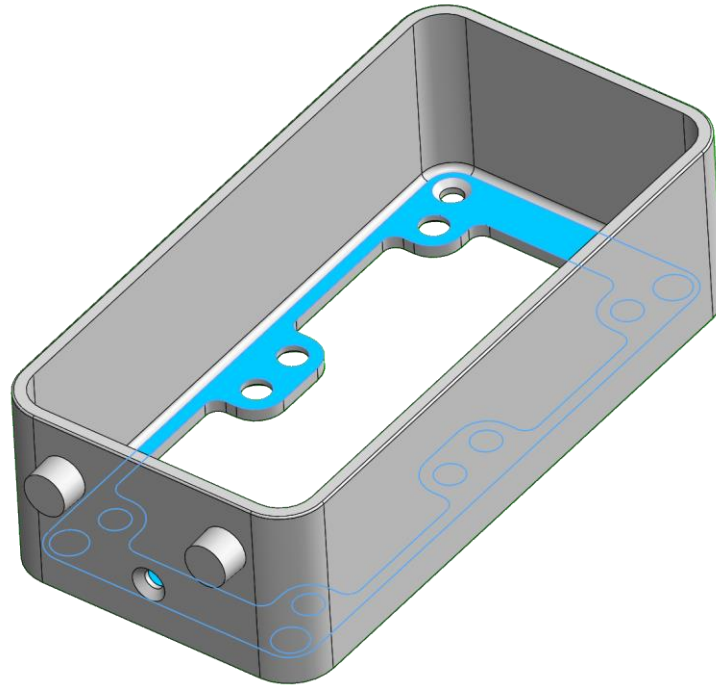
Number of copies required: 1

Supports needed: Yes

Recommended color: Dark gray (white version) or Black (black version)

Description:
The inner frame holds the front bars. Add 1 x M2.5 threaded insert into the yellow hole in the picture above. Mounted into 3. Front frame after it's attached to 4. Main body. Secure with 1 x M2.5 screw from the bottom.

3. Front frame

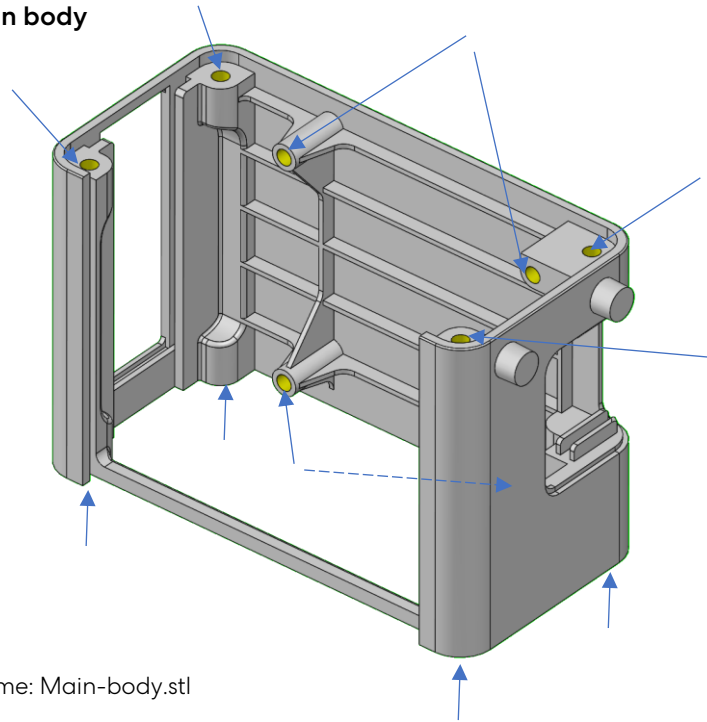File name: Front.stl

Number of copies required: 1

Supports needed: No

Recommended color: White (white version) or Black (black version)

Description:
The front frame holds the inner frame with the wooden bars and up to two 40 mm fans. Place the fans (optional) on the surface highlighted in blue and secure them from the opposite side. Use 4 x M2.5 screws to attach the assembly to 4. Main body, make sure to check that all four feet are facing the same direction.

4. Main body

File name: Main-body.stl

Number of copies required: 1

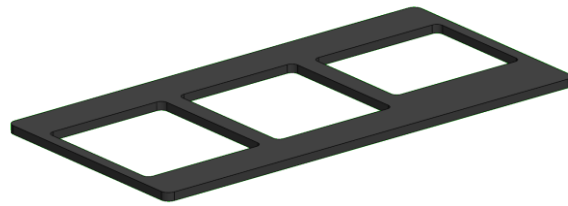Supports needed: Yes, organic from build plate recommended.

Recommended color: White (white version) or Black (black version)

Description:
The main body holds the motherboard, and all other components are assembled to it. Add 12 x threaded M2.5 insert at the locations indicated by the arrows in the picture.

5. Top I/O shield

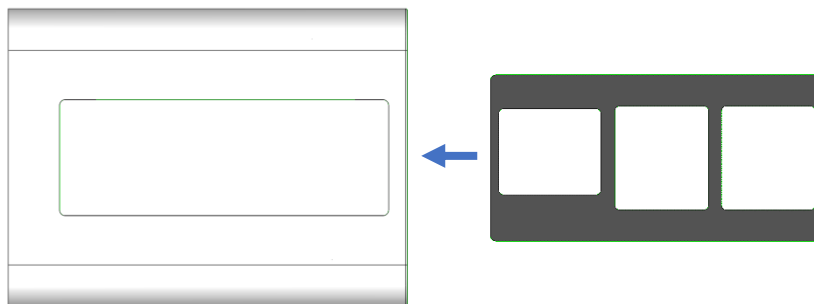File name: Top-IO.stl

Number of copies required: 1

Supports needed: No

Recommended color: Dark gray (white version) or Black (black version)
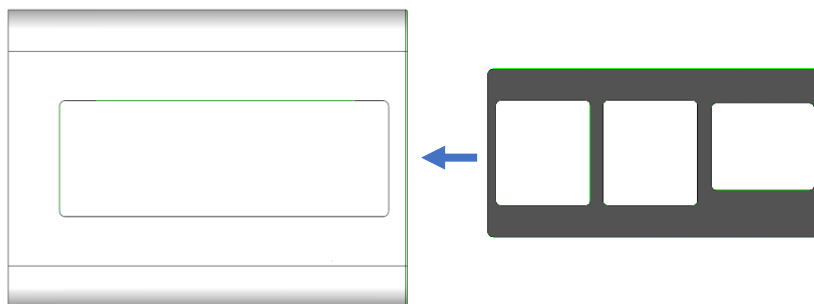
Description:
The top I/O shield is inserted from the back and can be flipped to accommodate most SBCs.
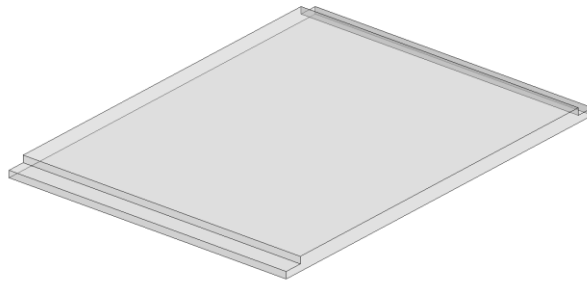
For Raspberry Pi 4 and similar:

For Raspberry Pi 5 and similar:

6. Right side panel
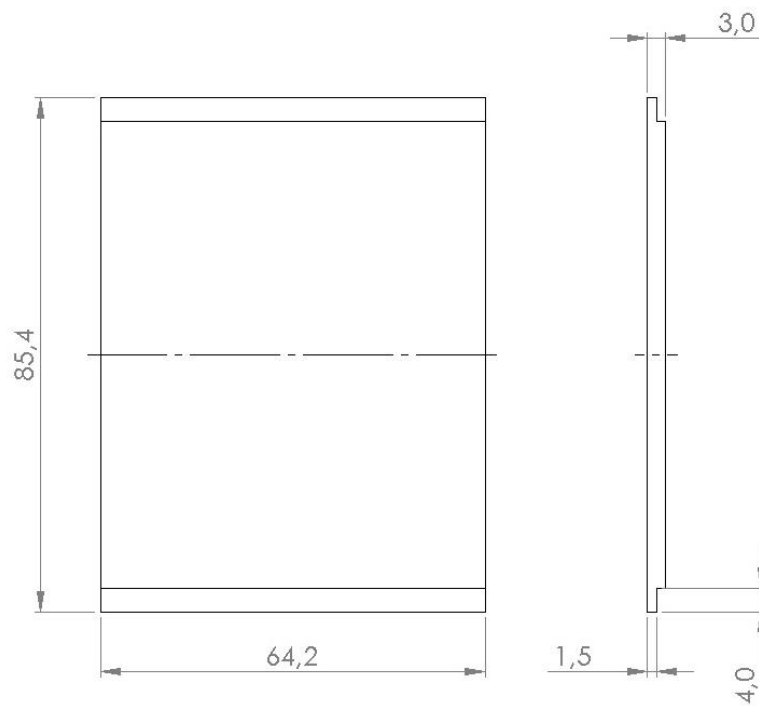

File name: Side-panel.stl

Number of copies required: 1

Supports needed: No

Recommended color: Transparent (both versions), White (white version) or Black (black version)

Description:
The side panel can either be printed in the same color as the rest of the case or cut from a transparent sheet (e.g. Acrylic). For a simple window, use a sheet that is 1 mm to 1.5 mm thick according to the outer dimensions in the drawing. For a flush side panel, a 3 mm thick sheet needs to be modified to match the shape of the .stl file.

The side panel slides into the main body from the rear.

7a. Rear panel multi
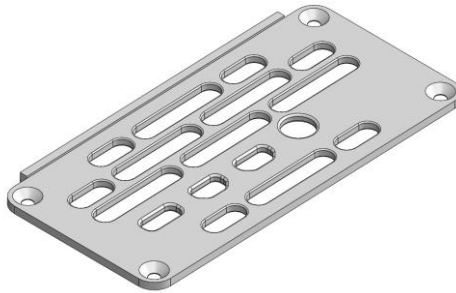
File name: Rear-panel_Pi4+5.stl
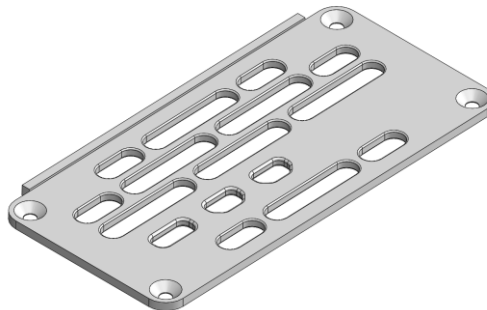
Number of copies required: 1

Supports needed: No

Recommended color: White (white version) or Black (black version)

Description:
This version of the rear panel is adapted to accept several kinds of I/O layout. It works for the Raspberry Pi 4B, Raspberry Pi5, Radxa Rock 4C Plus and others. Perfect for when you want the ability to swap without printing a new rear panel.
The panel is screwed into place from the rear with 4 x M2.5 screws

7b. Rear panel Pi 5

File name: Rear-panel_Pi5-only.stl
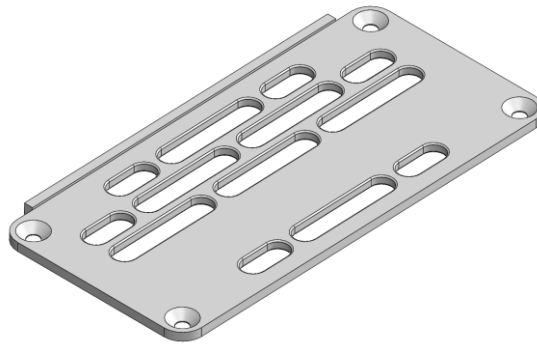
Number of copies required: 1

Supports needed: No

Recommended color: White (white version) or Black (black version)

Description:
This version of the rear panel is fitted to the Raspberry Pi 5 only.
The panel is screwed into place from the rear with 4 x M2.5 screws

7c. Rear panel DIY
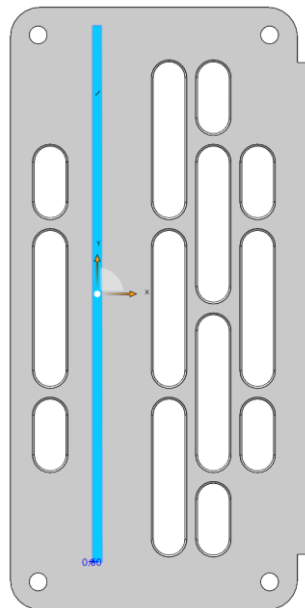

File name: Rear-panel_vents-only.stl

Number of copies required: 1

Supports needed: No

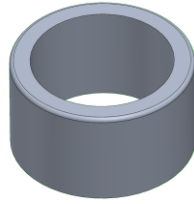Recommended color: White (white version) or Black (black version)

Description:
This is a "blank" version of the rear panel that you can adapt to your specific SBC. It has a small indentation on the inside that shows where the PCB of the motherboard is located in the case (this can be removed before printing):

Check the documentation for your SBC and see if there are 2D or 3D drawings that can be used. We recommend leaving around 0.5 mm clearance around each I/O port.

The panel is screwed into place from the rear with 4 x M2.5 screws

8. Foot ring

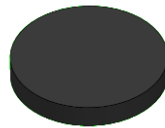File name: Foot-ring.stl

Number of copies required: 4

Supports needed: No

Recommended color: Silver/Aluminium (white version) or Gold/Brass (black version)

Description:
This is a decorative ring that is glued to the feet of the case.

9. Foot rubber pad

File name: Foot-rubber-pad.stl

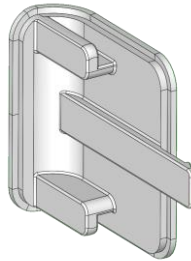Number of copies required: 4

Supports needed: No

Recommended color: Black

Description:
This pad can either be printed in the same material as the rest of the case or in something more rubber-like to increase the friction of the feet. They can also be cut from a sheet of rubber. They are glued to the bottom side of the feet on 3. Front frame and 4. Main body.
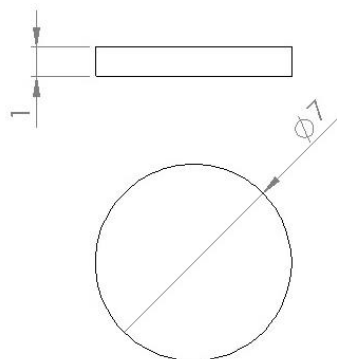
10. Bottom hatch

File name: Bottom-hatch.stl
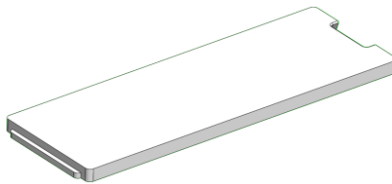
Number of copies required: 1

Supports needed: Yes

Recommended color: White (white version) or Black (black version)

Description:
This hatch is slid into the opening in the bottom of the min body. Its function is to provide easier access to the MicroSD card tray and power button located here on many SBCs.

11. Top I/O Cover (optional)

File name: Bottom-hatch.stl

Number of copies required: 1

Supports needed: No

Recommended color: White (white version) or Black (black version)

Description:
This cover is slid into place over the top I/O when none of the ports are in use.

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