Tiny John Speaker

Assembly Guide



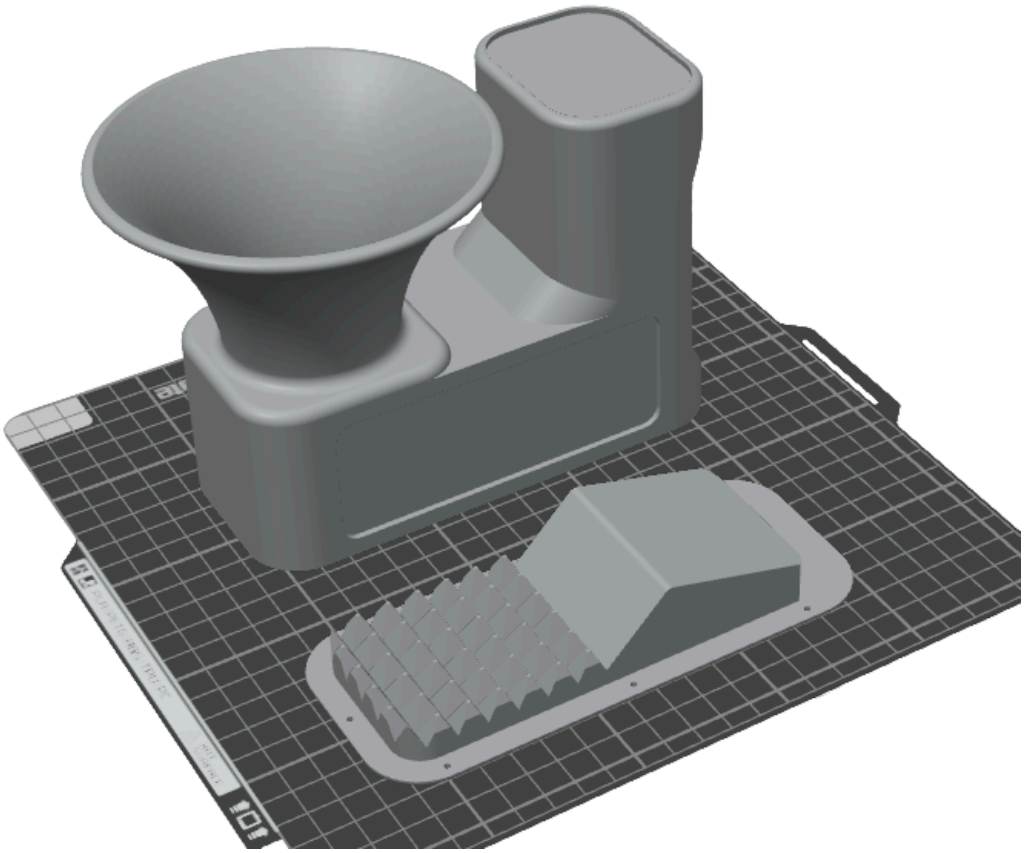
Version 1.0

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PRINTING GUIDE

Each speaker assembly consists of two seals, two feet, a passive radiator and sealing ring, two mesh panels, and a two part speaker enclosure. These are then combined using a central electronics bridge.

Print settings for the speaker enclosure parts (pictured):



Use a Fiberglass infill PETG/ABS/PA/PC for best results

0.2 layer height

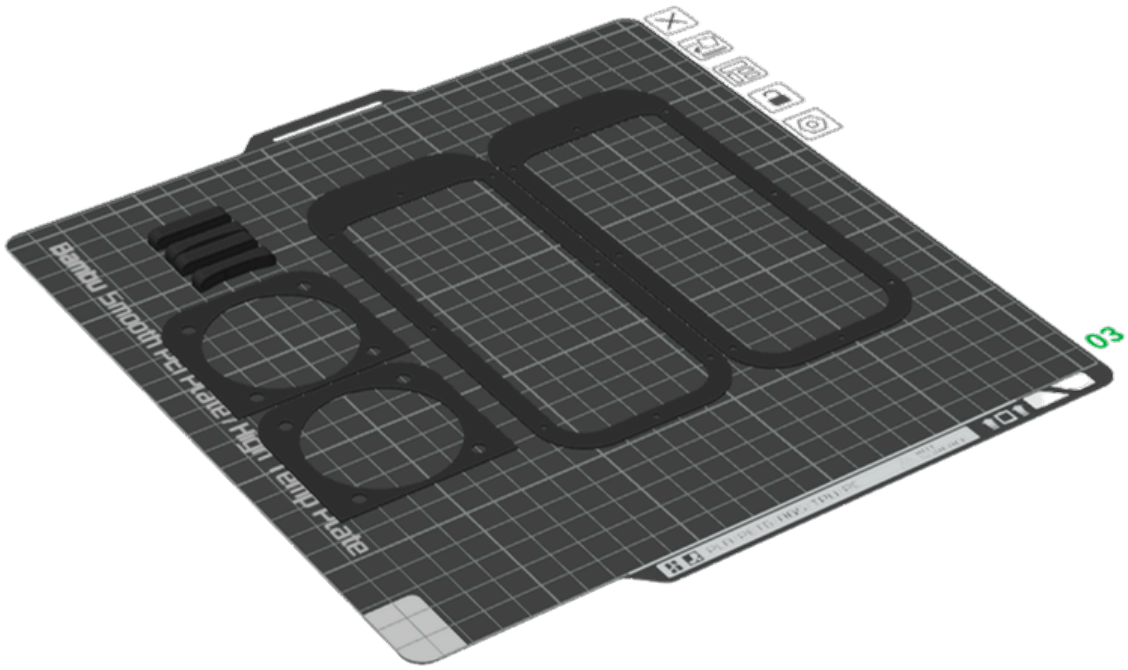
1.2 - 1.6mm thick walls. (3/4 perimeters)

40% Triangle or Hexigon Infill

1.2mm Top/Bottom Thickness (6 layers)

Organic supports (On build plate only)

Print Settings for TPU seals (pictured)



Use a 90A rated TPU for best results

0.15 layer height

1.2mm perimeters (3 walls)

1.15 Flow Rate

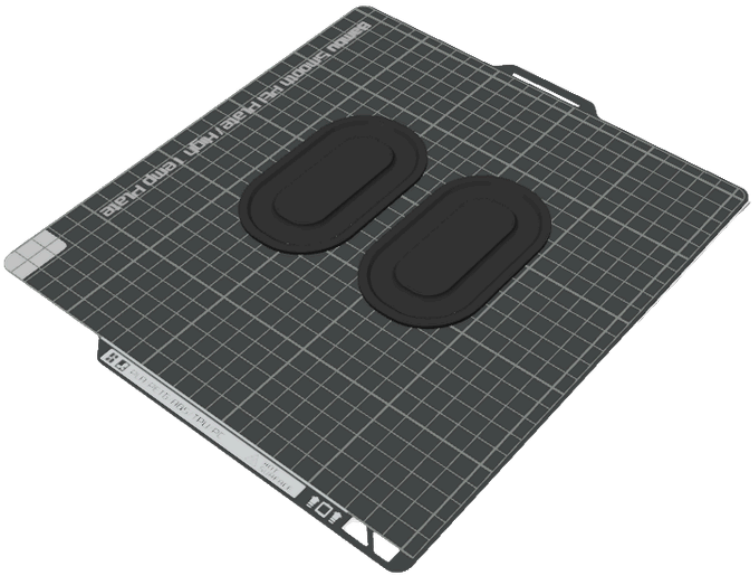
40mm top speed

1mm top/bottom thickness

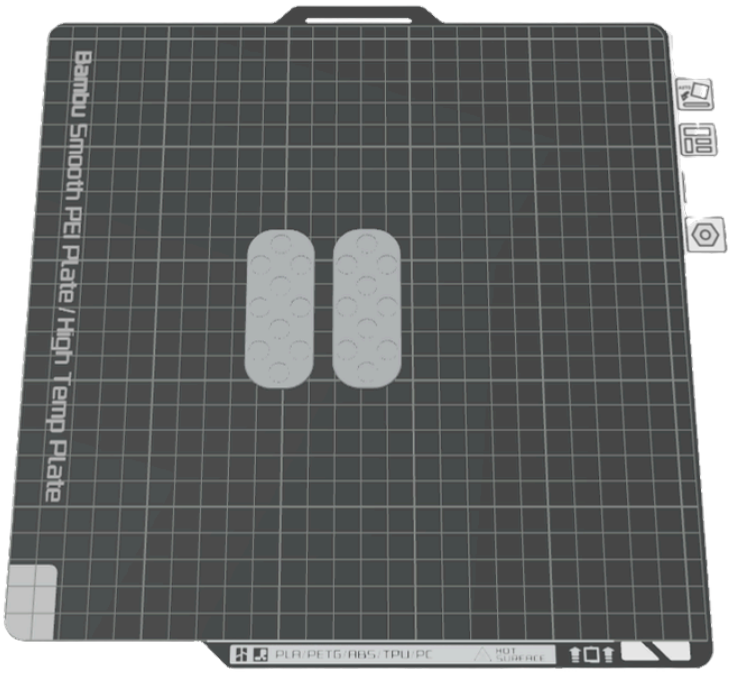
Concentric top layer pattern, Monotonic bottom layer pattern.

Enable Fuzzy skin for feet (optional)

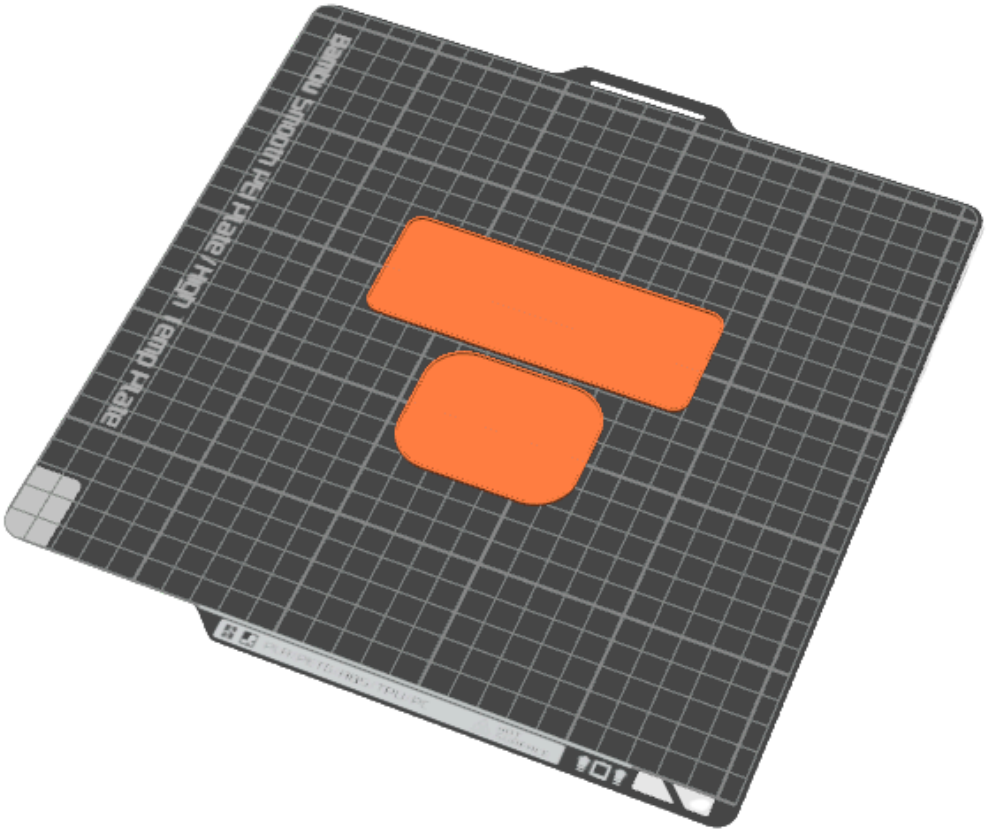
Print settings for tpu passive radiators (pictured)



Exact Same settings as the TPU Seals, with the addition of a pause at layer 17 (2.6mm) So that the radiator puck (pictured below) can be installed. Print these the same as the speaker enclosure parts.



Print Settings For Mesh Inserts (Pictured):



Use PLA for Best Results

0.2mm layer height

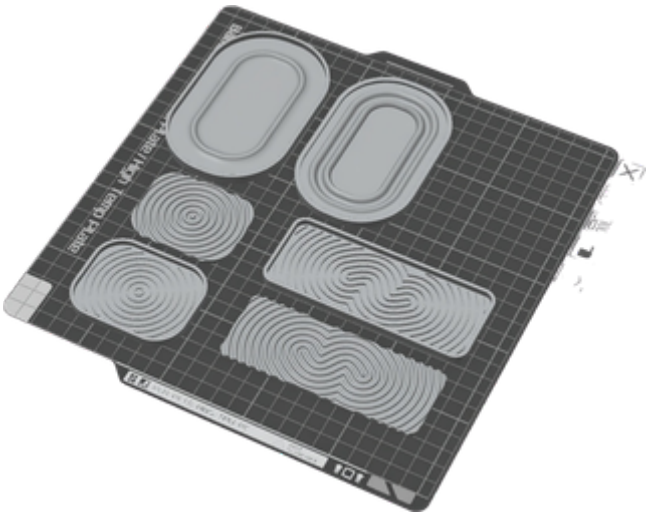
.8mm perimeters (2 walls)

0 top/bottom layers

60% sparse infill (Honeycomb recommended)

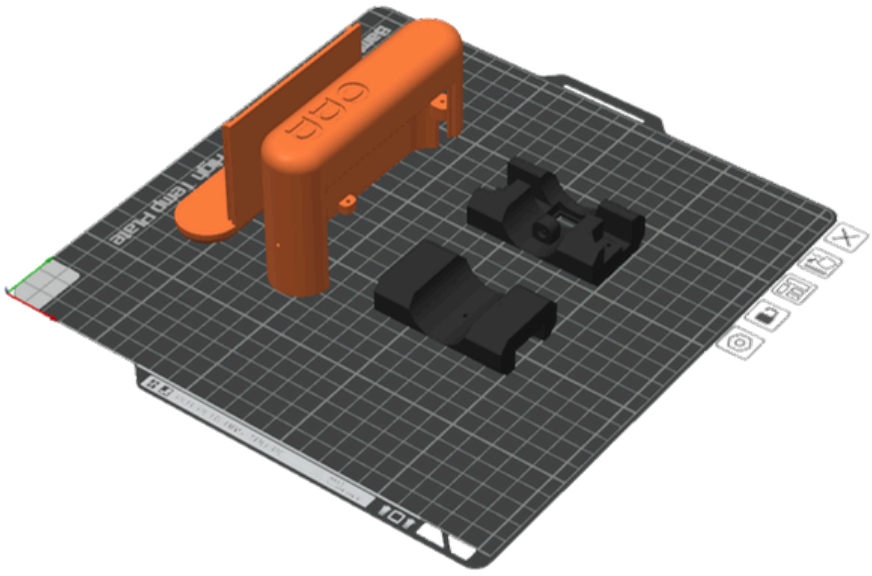
You can change the sparse infill pattern for different aesthetics.

Print settings for thermoform presses (pictured):



Print these the same as the speaker enclosure. However, they must be made out of a high temperature material. PETG at a bare minimum.

Print Settings for Electronics enclosure (pictured):



Any rigid filament is a valid choice for these.

0.2mm layer height

Organic Supports (build plate only)

1.2mm thick perimeters (3 walls)

THERMOFORMING GUIDE

Step 1.

Heat a 3D printer build plate. For PLA blanks, 70C. for TPU blanks, 85C.

Step 2.

Put a sheet of paper down on the build plate. Then, set thermoform blank on the paper. For added safety, you can slide it on to the smaller thermoform and set it blank side down, to prevent warping while it pre-heats.

Step 3.

After 15 minutes heating, lift the form and clasp the blank in between both halves of the thermoformform die. Then, set it back on the build plate (hot side down).

Step 4.

Immediately set a heavy flat object on top of your die, like a book. Then, turn off the heated bed.

Step 5.

Let heated bed return to room temperature and then remove book from top of the die. You may now seperate the die and enjoy your new thermoformed print!

ASSEMBLY GUIDE

Required hardware:

22X 2*8mm Self Tapping Screws

8X 3*5mm Self Tapping Screws

SuperGlue

Sealant Glue (Like Silicone)

All Printed Parts

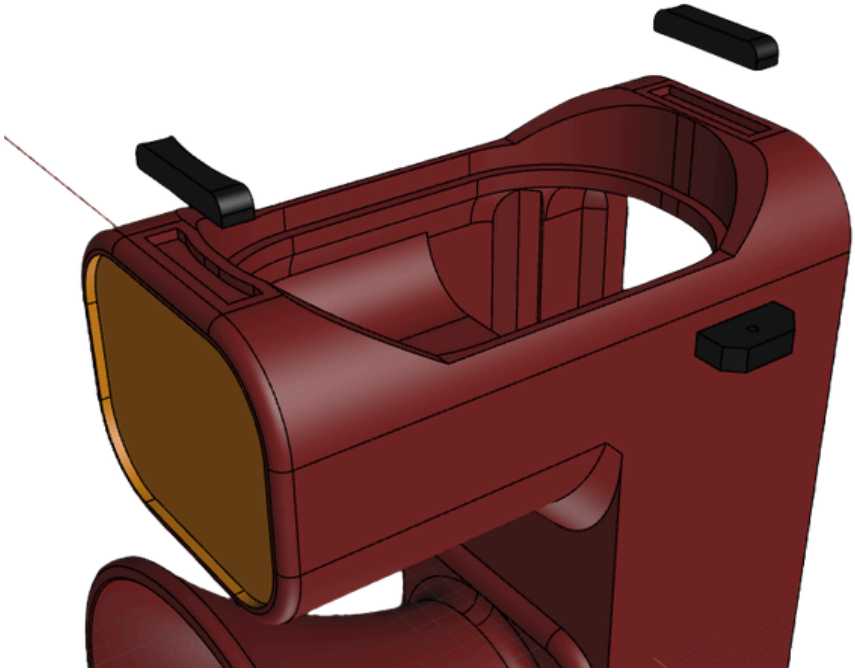
4X AA Battery (Or Makerworld USB with polarity flipped)

DIY Bluetooth Speaker Kit (Pictured Below:)

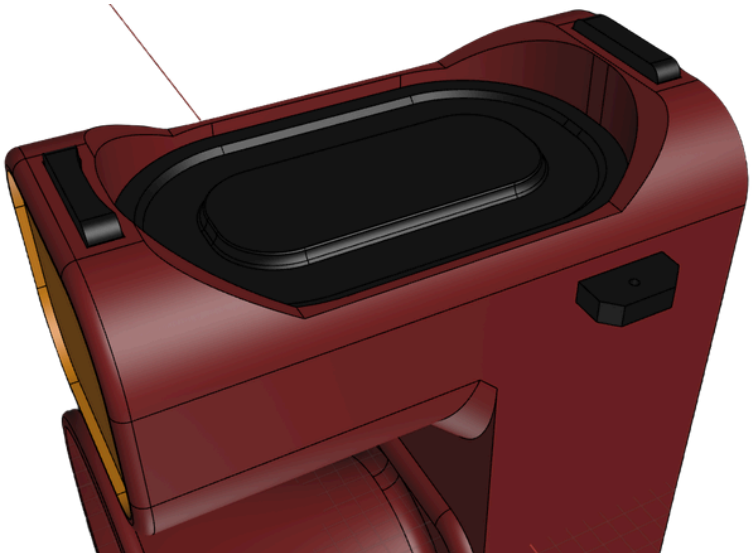


For The following instructions, we will be constructing each speaker enclosure. It is assumed in these instructions that you will be building both speaker enclosures at the same time. So for those parts, double each step and build both halves at the same time.

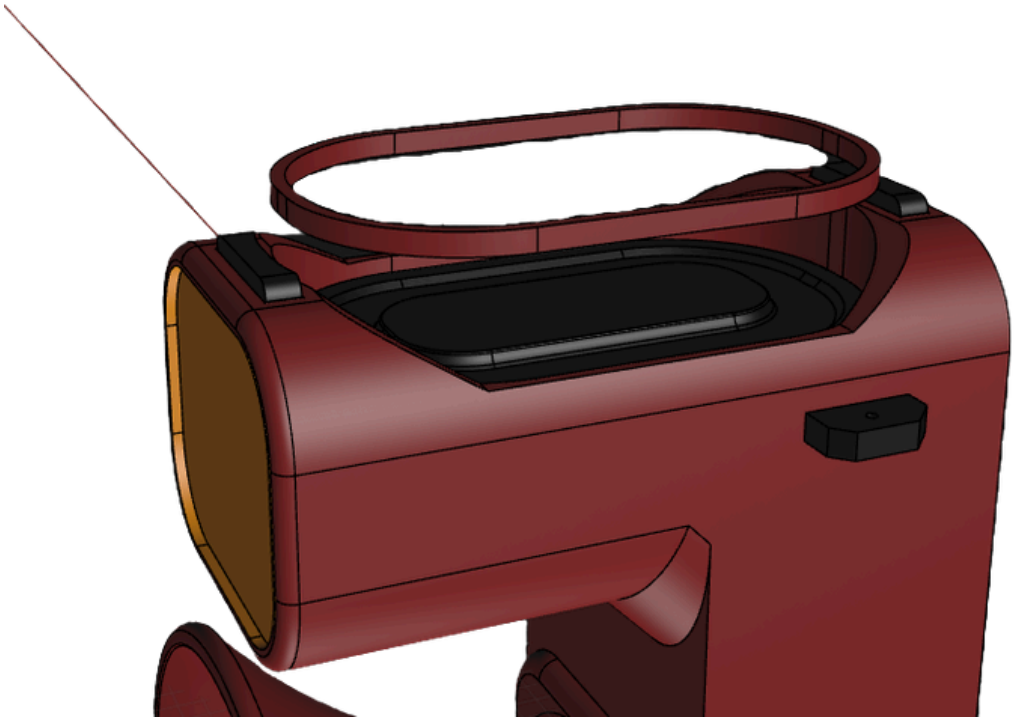
Start by attaching the feet to the speaker enclosure using sealant glue. Sealant glue is required for gluing to TPU.



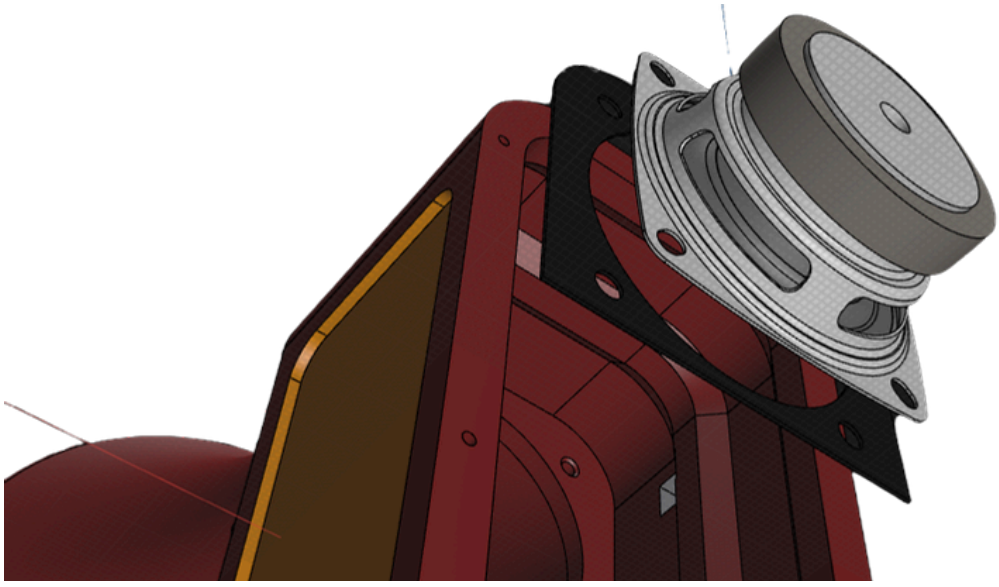
Once both feet are attached, add a thread of sealant glue around the entire surface of the ring where the passive radiator will sit. Then, seat the passive radiator in place. (Note, you should have already thermoformed the passive radiator)



Once the passive radiator is installed, add another thread of sealant glue around the outer perimeter, roughly the same way you did in the previous step. Then, install the rigid Passive Radiator securing ring.



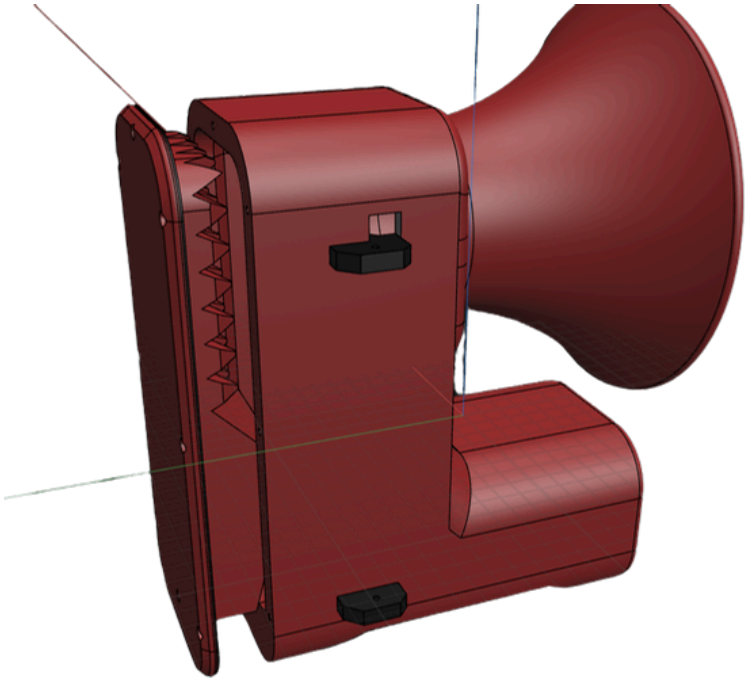
Now, set the assembly horn down, and it’s time to install the speaker drivers. Put the speaker seal over the interface, making sure the screw holes line up. Then, install each speaker driver using 4X 3*5mm Self tapping screws each.



Note, as part of installation you will thread the wire through the hole in the side of the enclosure. Once everything is situated, seal the hole with sealant glue.(The wire should rest on the bottom portion of the hole)

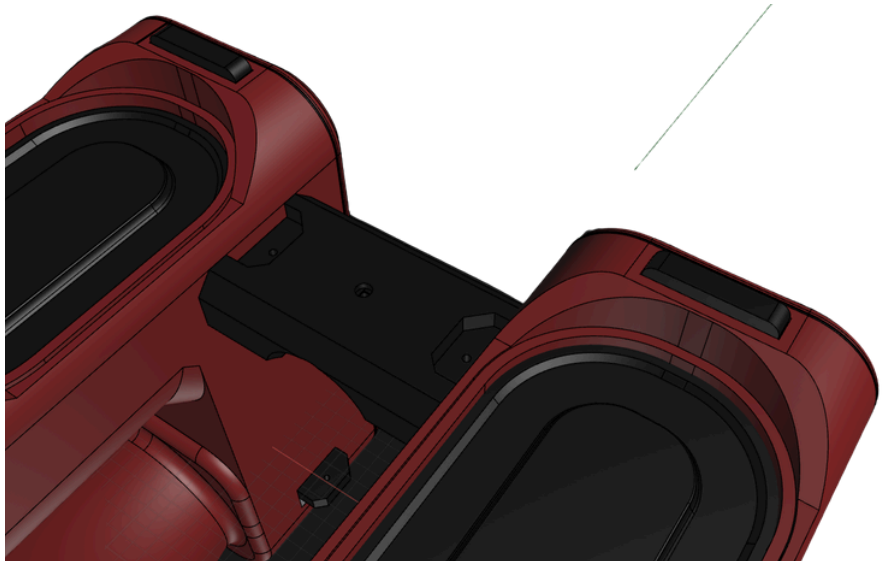
At this point, you should let the speaker enclosures sit until the sealant glue has at least mostly cured. Operating the speakers before the sealant has fully cured will likely result in leaks that can compromise the sound quality.

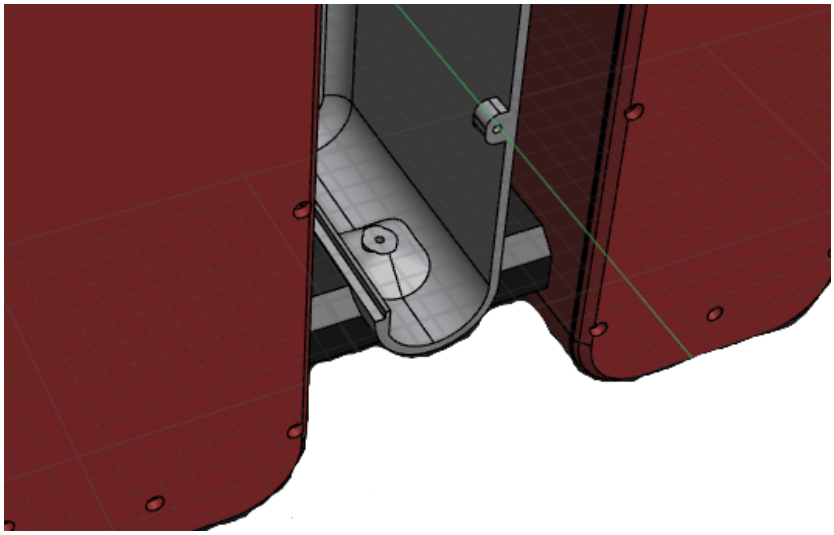
Set the back seal on the back of the enclosure, then install the back of each enclosure with 8X 2*8mm Self Tapping Screws



Once the backs are installed, you can go ahead and glue the mesh inserts into place. Superglue works great for this, just a drop, then run a toothpick around the inner edge to evenly spread the glue.

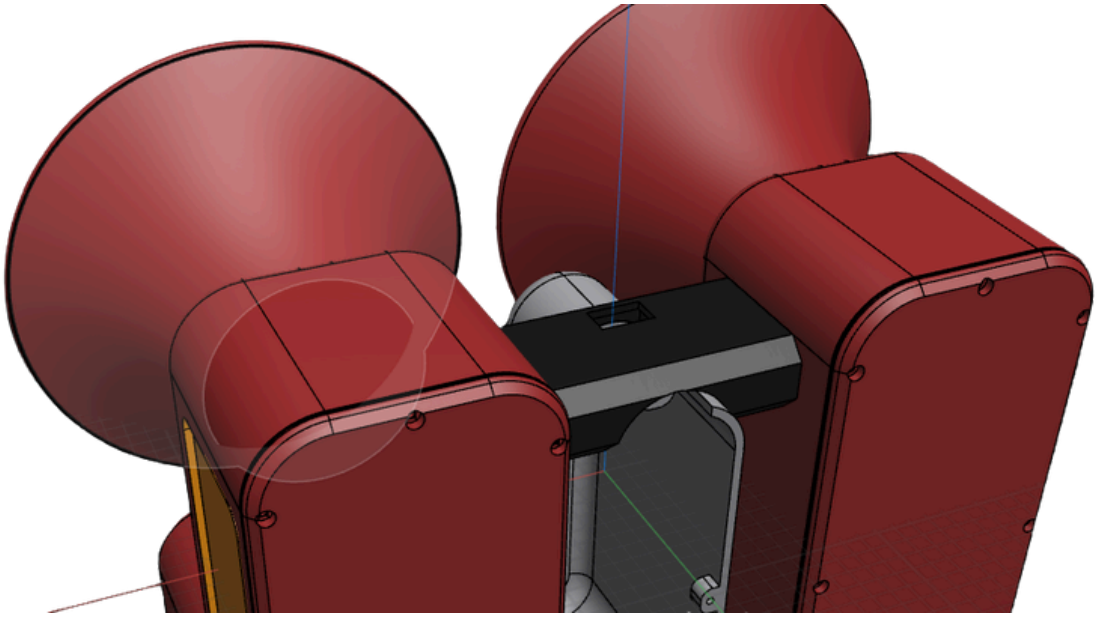
Install the bottom bridge between the two enclosures using 2X 2*8mm Self Tapping Screws





Install the electronics housing on to the bottom bridge using 1X 2*8mm Self tapping Screws.

Thread wires for speaker drivers through the top bridge and into the electronics enclosure. Then, install top bridge using 1X 2*8mm Self Tapping Screw. Then, you can push the power switch through the hole in the top bridge.



The rest of this build is pretty simple. Just connect the power cable, speaker drivers, and your power source. The board includes adhesive you can use to secure it.

I have left the electronics enclosure mostly empty so it may be used with a variety of kits/hardware, as long as they use 2” Speakers. Once you are happy with where everything is at, simply slide the back on the enclosure and you’re done! You may also use a 2*8mm self tapping screw to close this extra secure.

For the AA Battery pack, it fits perfect. You may also use the MakerSupply USB cable, though you have to switch the polarity of the wires for it to work on the kit. This is done by cutting the wires and re-splicing them red to black and black to red.

I hope you enjoy your speaker, and let me know if you have any trouble, or if anything was unclear! I wrote this while I was sick with the flu.

Cheers!

