



How to build your robot

www.pib.rocks/build



assembly instructions for:

HEAD



You
Print
Build
Develop

your own robot!

Printable and pre-assembled parts



Pib's head consists of **2 printable parts** and is assembled in **15 steps**.

In order to construct the head, you will need to print the parts as seen in the table.

Please note: For better readability we use the abbreviations in the tutorial: A01 instead of A01-Face.

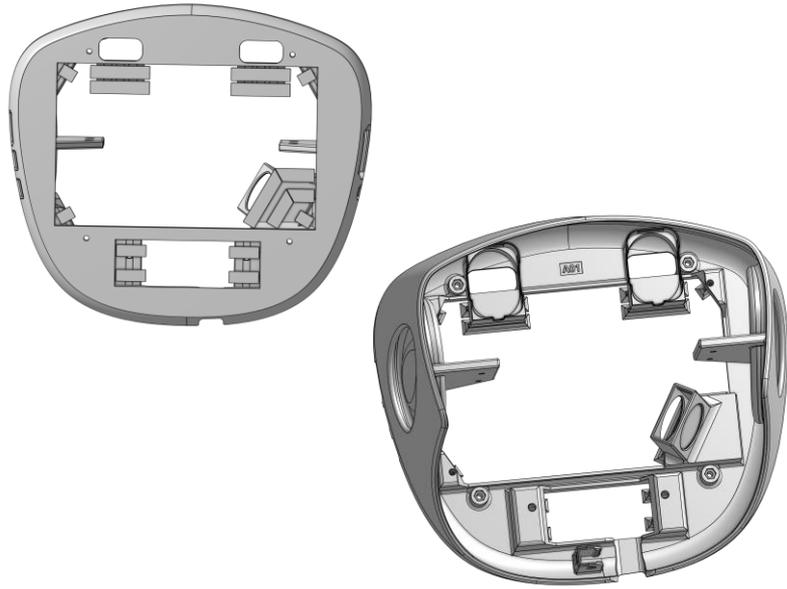
Printable parts

A01-Face

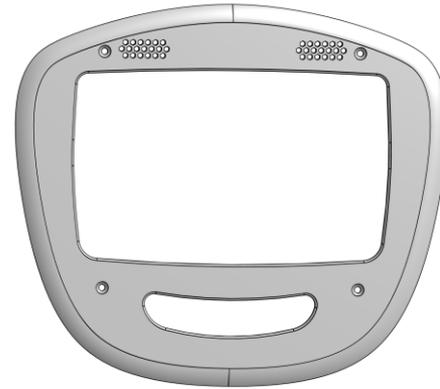
A03-Face_Plate

Printable parts - Overview

A01-Face



A03-Face_Plate



Non-printable parts



You will also need the following non-printable parts from our pib.Box Master.

If you do not have it yet, you can buy in our shop
<https://shop.pib.rocks>.

Non-printable parts

1 x **E01** Raspberry Pi (with heatsink)

1 x **E02** TinkerForge HAT (with 2-pole-connector)

1 x **E04** OAK D-Lite

1 x **E05** LCD screen
with screws, distancer, speaker, connectors

1 x **E12** USB Microphone

4 x **S01** M3 nuts

4 x **S06** 16mm screws

2 x M4 10mm screws

1 x USB to USB-C cable

90 cm black/red cable

1 x Micro-SD-card

Build it better: our suggestion for assembling pib



We recommend **tools** for each step. These are a suggestion, you can of course also use other tools.



1-5

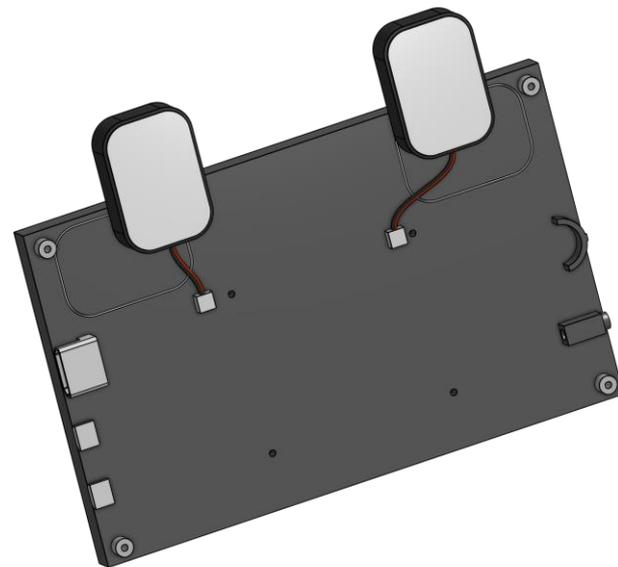
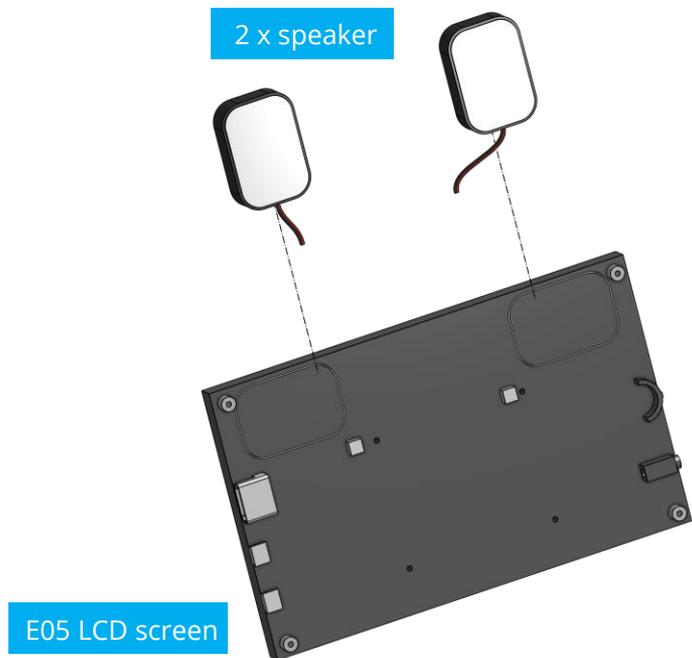
We have categorized each step according to its **difficulty** - from **1-5** (1 being the easiest, 5 the hardest)



We also show you which **non-printable parts** you need for each step

Step 1

Insert **2 x speakers** (part of the screen package) into the shown spots in the **E05 LCD screen**.

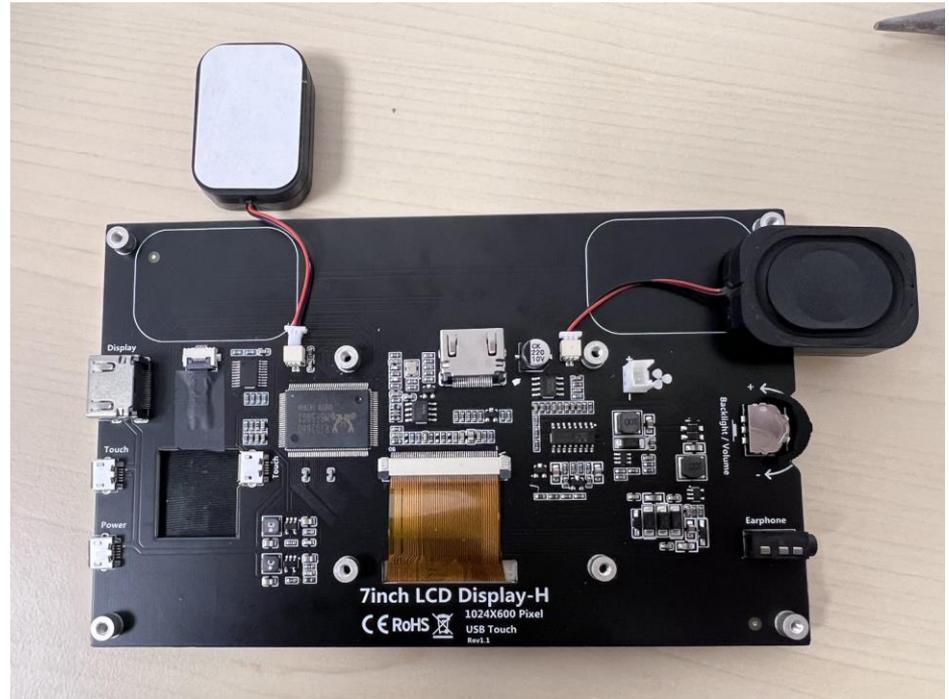


Step 1 - note

The small white parts at the end of the cable look symmetrical. But they are not.

There is one part where some metal parts are shown – these side have to face down towards the LCD screen.

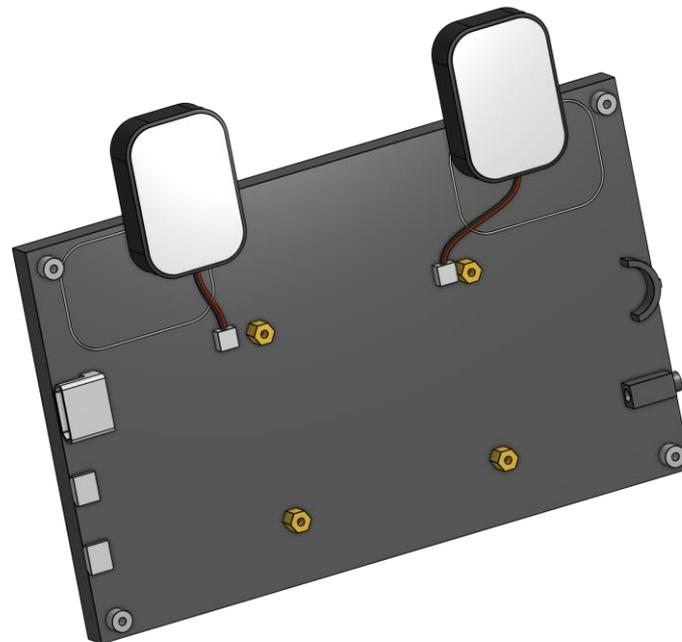
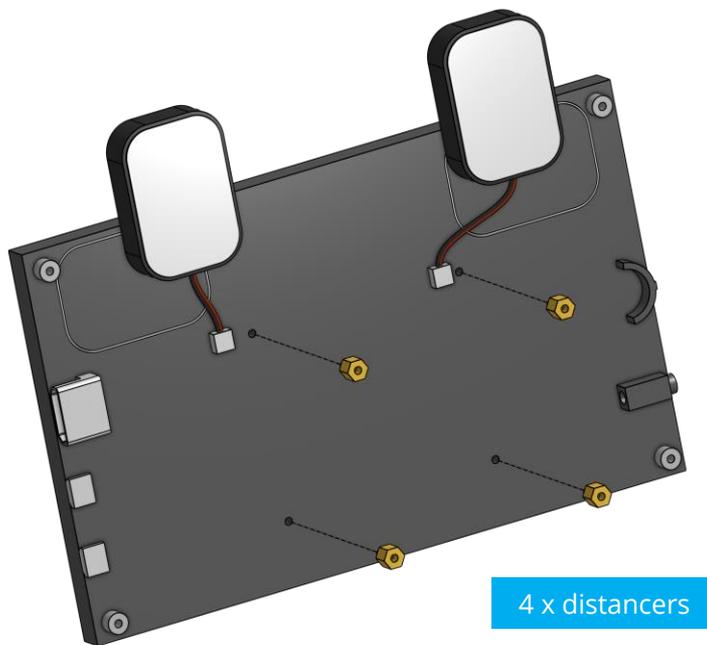
Make sure to place to ends in the correct orientation.



Step 2

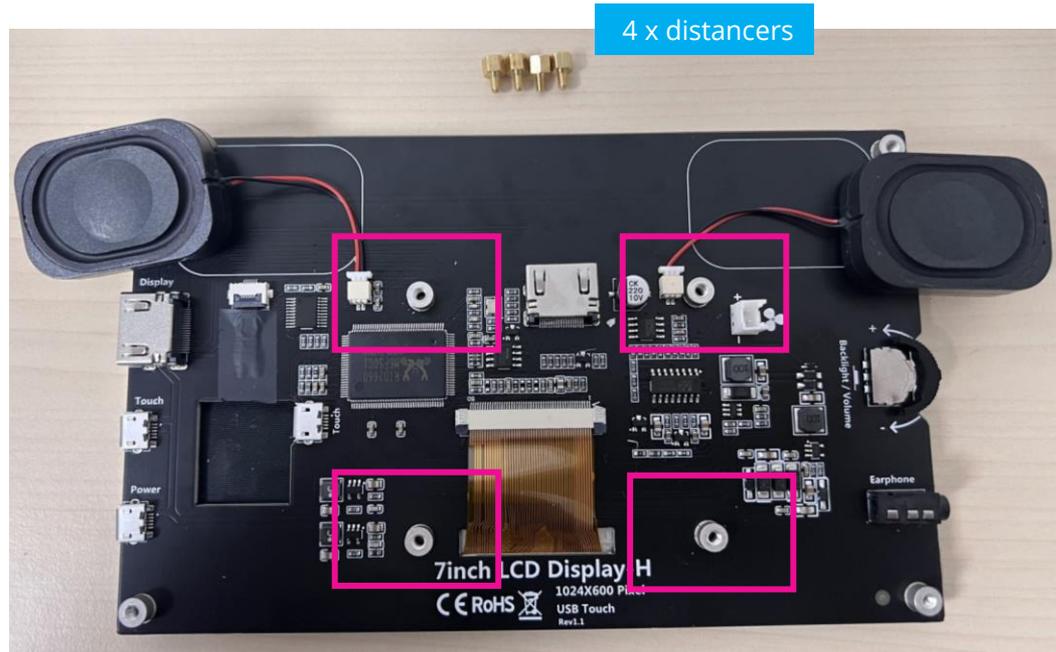


Insert **4 x M2.5 distancers** (part of the screen package) in the shown spots in LCD screen.



Step 2 - note

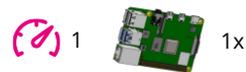
If there is some protection foil on the shown spots in the picture, please remove it before you insert the distancers.



You do not need tooling for this step. The distancers can be easily put on by hand.

Step 3

Insert the **Micro-SD-card** into the **Raspberry Pi**.

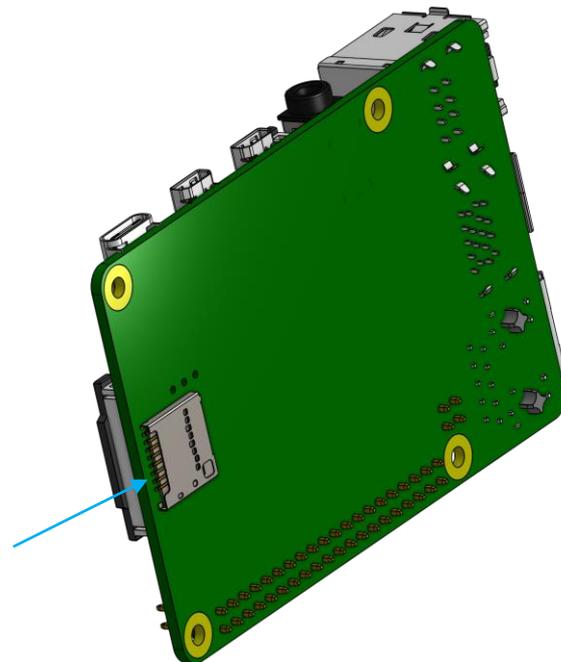


Before you insert the SD card make sure you have installed the pib.software on it.

You can find the tutorial here:

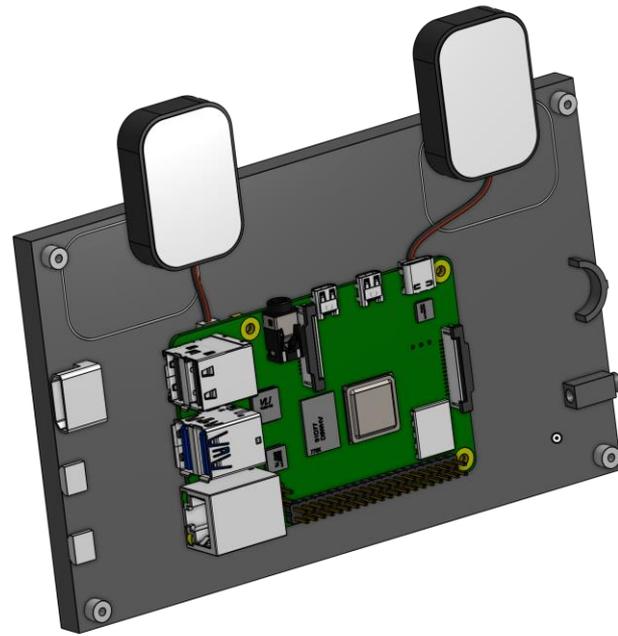
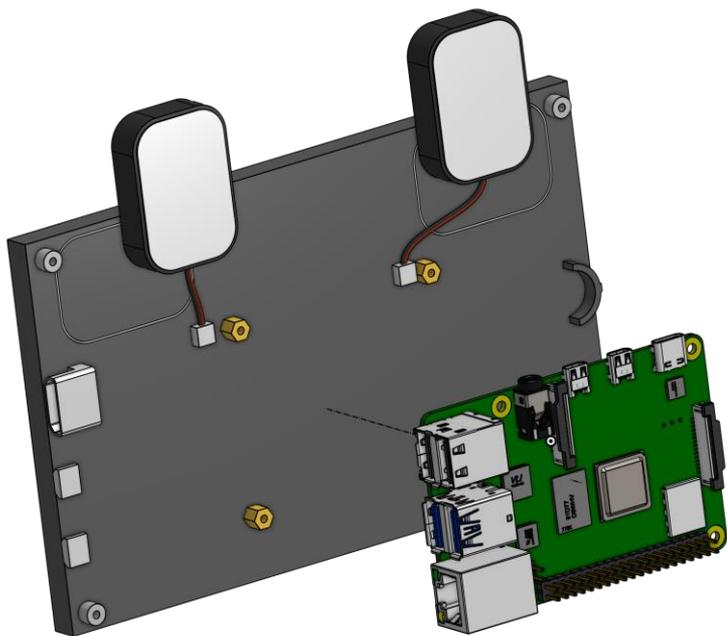
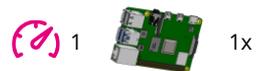
<https://pib.rocks/build/how-to-install-raspberry-pi/>

Insert SD-card here



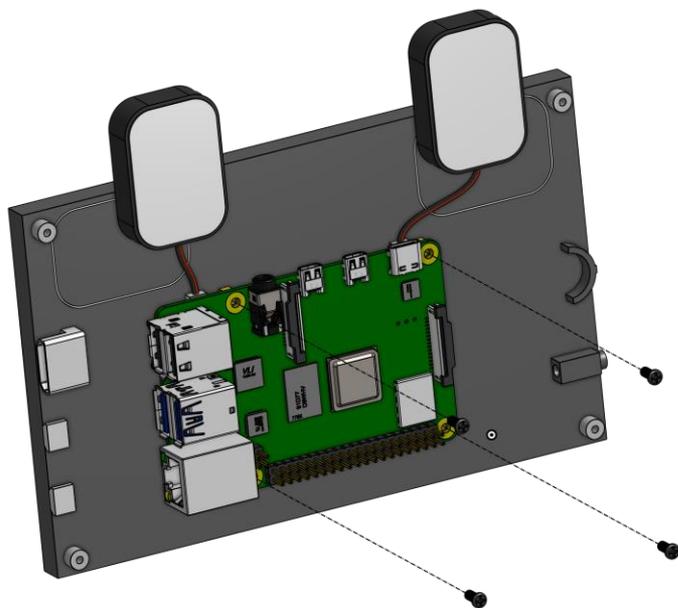
Step 4a

Place the **Raspberry Pi** on top of the **LCD screen**.

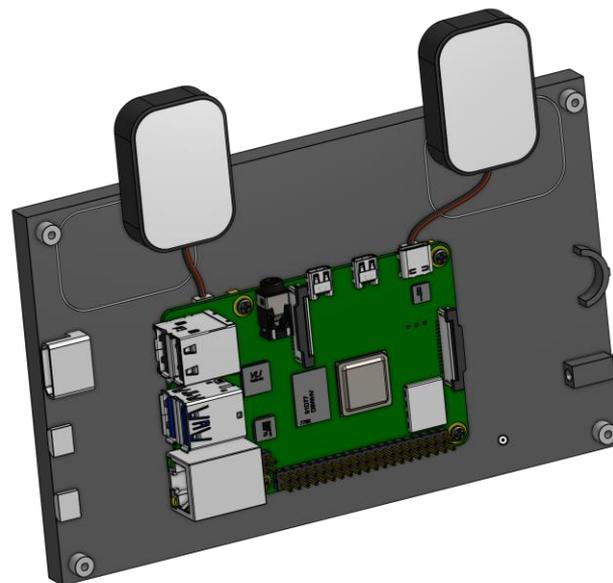


Step 4b

Fix the assembly with **4 x M2.5 6mm screws** (part of the screen package).



4 x M2.5 6mm screws

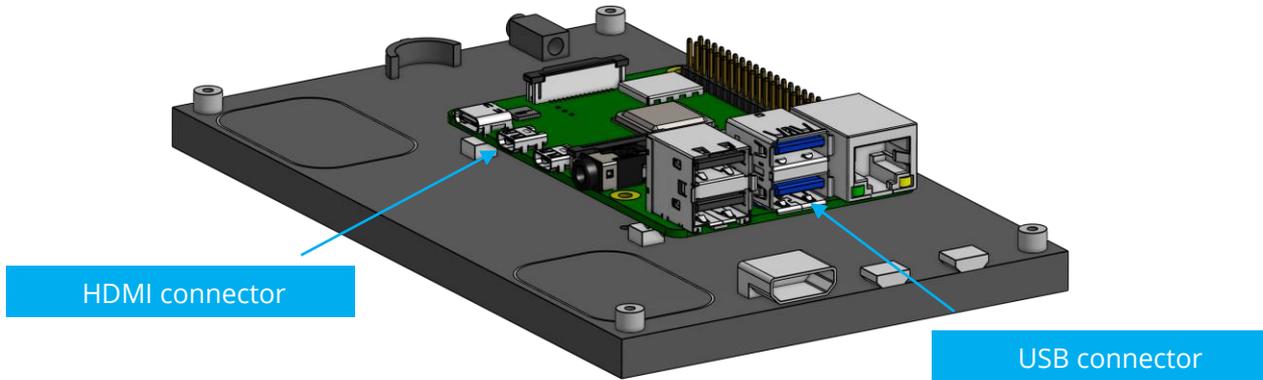


Step 5

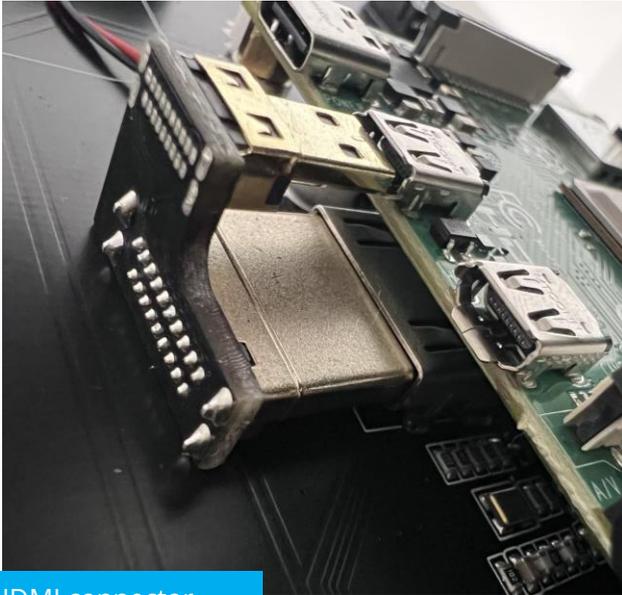
Now, we have to connect the Raspberry Pi and the LCD screen electronically.

For this, there are two connectors (part of the screen package):

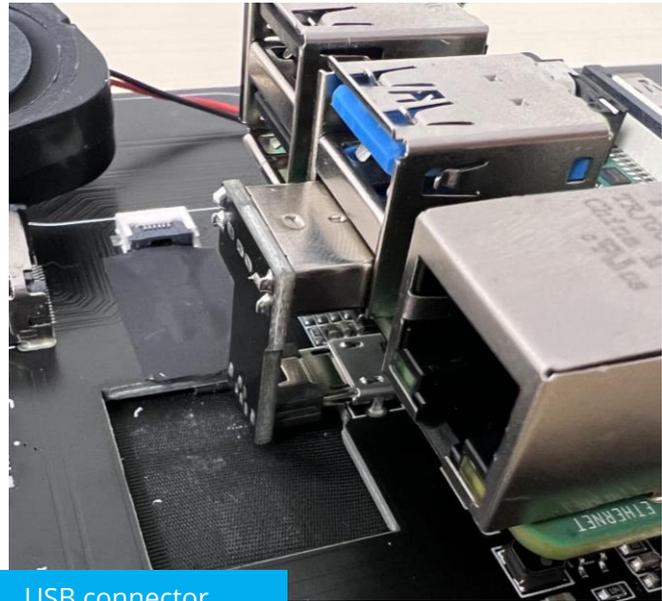
- **USB connector** (responsible for touch screen functionality)
- **HDMI connector** (responsible for video signal)



Step 5 - note



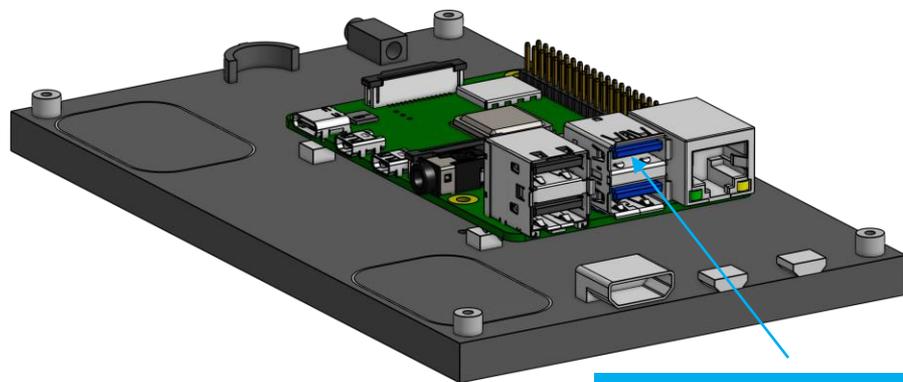
HDMI connector



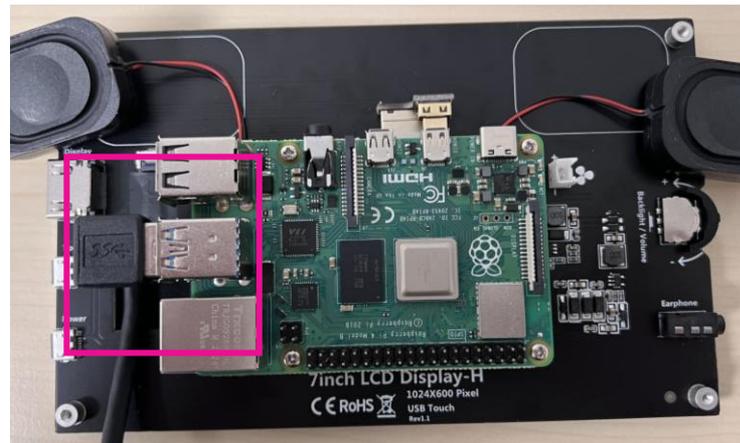
USB connector

Step 6

Connect **“USB to USB type-c”-cable** in the shown spot for usage of the camera.

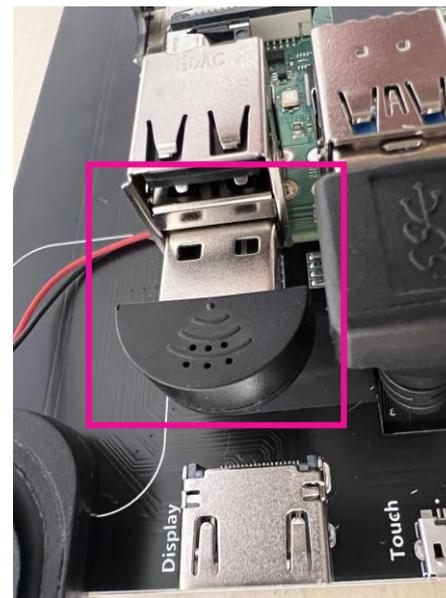
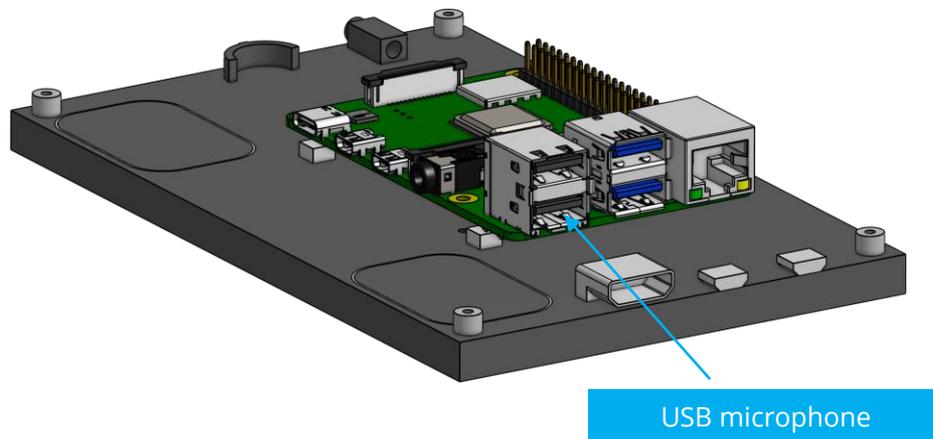


USB to USB type C cable



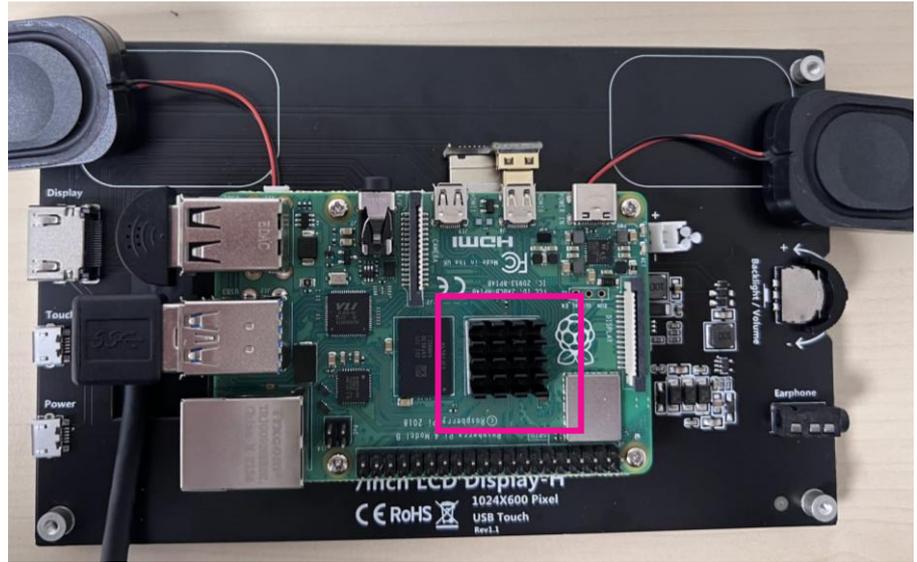
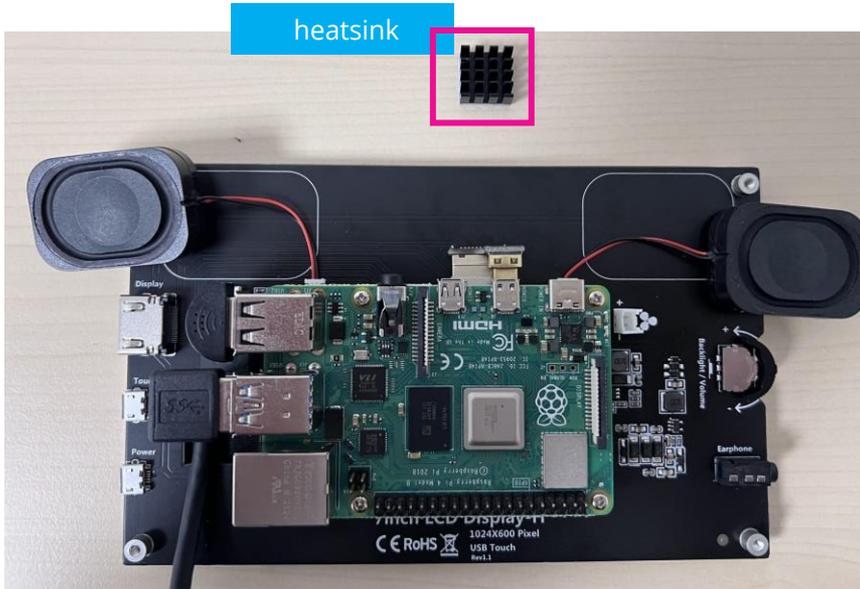
Step 7

Connect the **USB microphone E12** to the shown port of the Raspberry Pi.



Step 8

Place a **heatsink** on the shown spot of the Raspberry Pi processor.
The heatsink is self-adhesive after removing the protective foil.



Step 9

Attach the **E02 TinkerForge HAT** to **Raspberry Pi** using the **GPIO pins**.

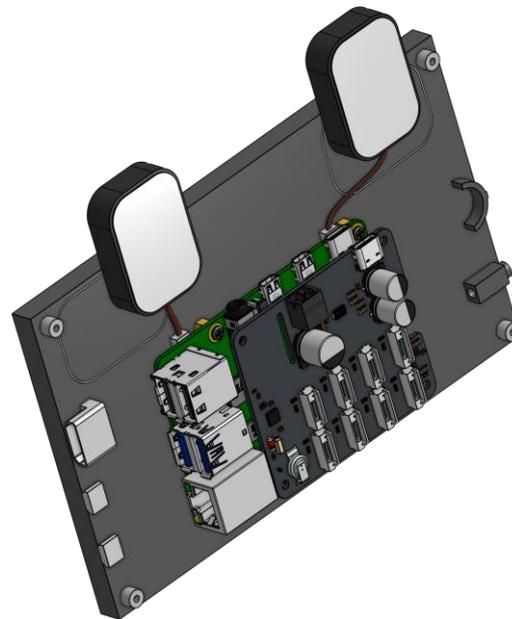
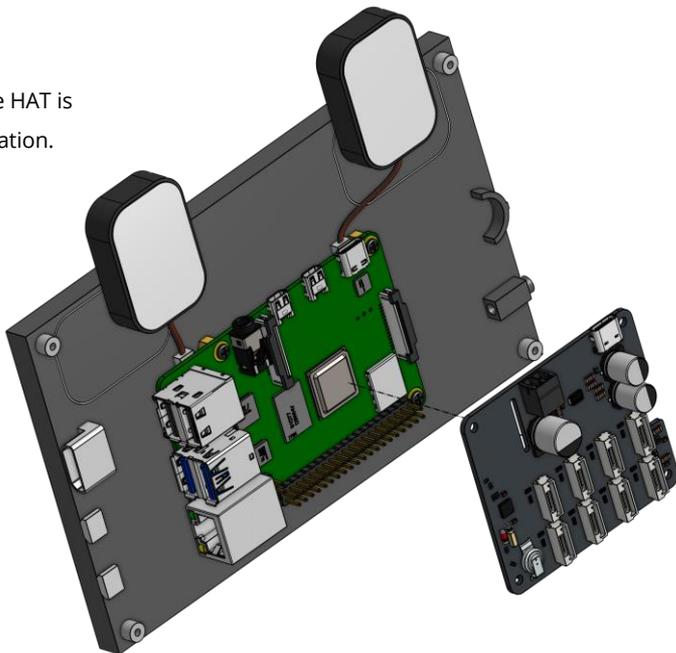


1



1x

Make sure, the TinkerForge HAT is placed in the shown orientation.



Step 10a



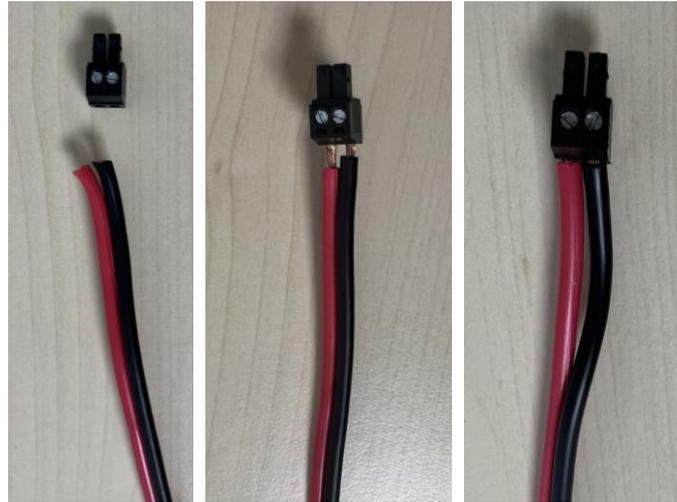
For the future power supply, we need to attach the black/red-cable onto the TinkerForge HAT.

Therefore, cut **90 cm of the cable**, strips its end a little bit and connect them into the **2-pole-connector** (part of the TinkerForge package).



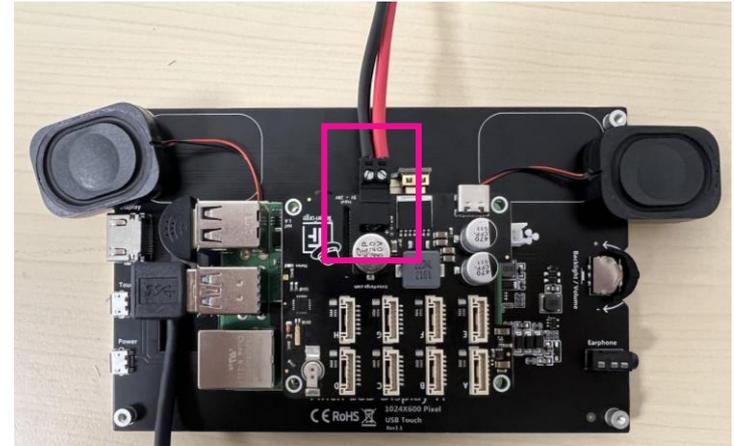
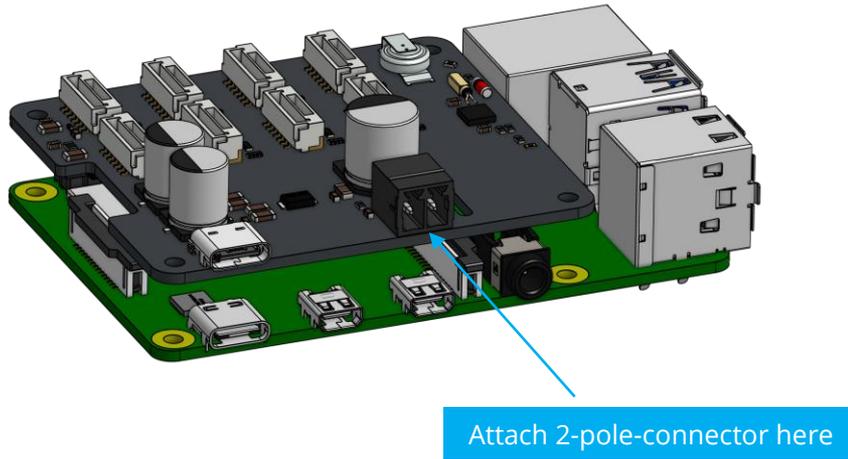
Make sure to place the wires in the correct switches:

- ✓ **Red** wire to + **Symbol** (left spot)
- ✓ **Black** wire to - **Symbol** (right spot)



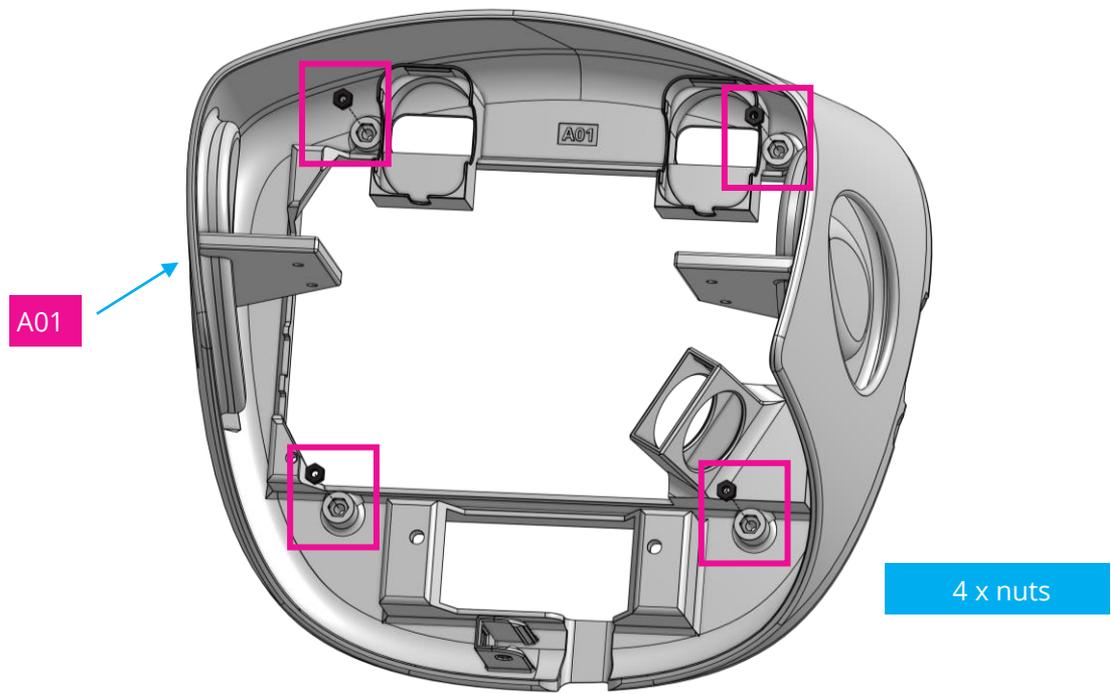
Step 10b

Then, attach the 2-pole-connector with the cable the the shown spot of the TinkerForge HAT.



Step 11

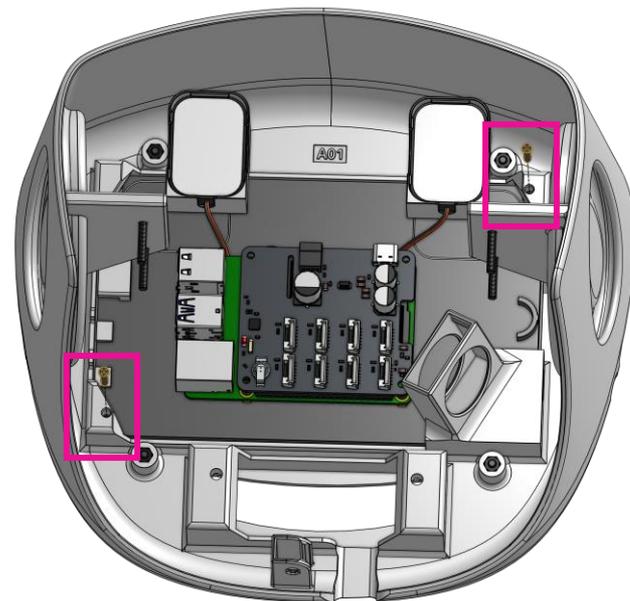
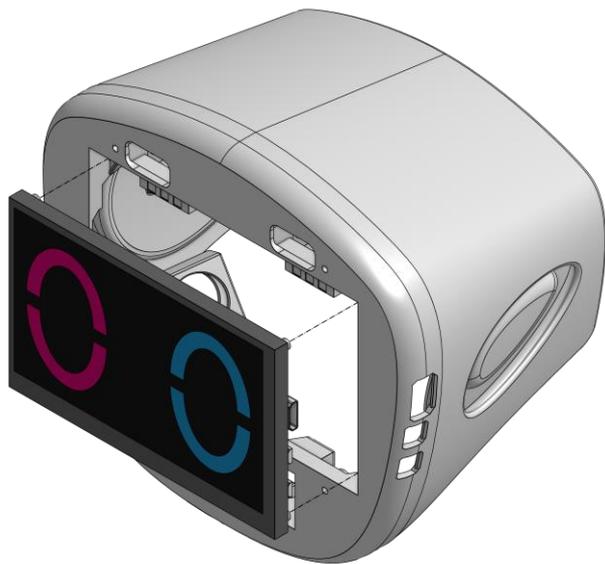
Insert **4 x nuts** in the shown spots in **A01**.



Step 12



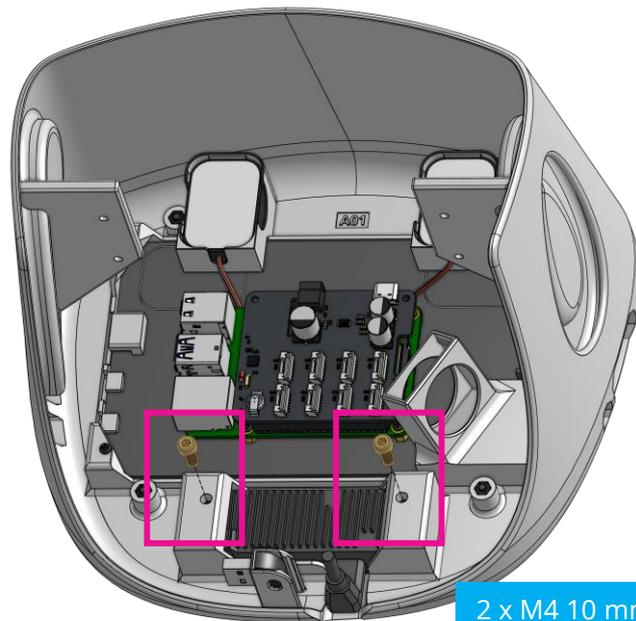
Insert the assembly from previous steps to A01 and tighten it using **2 x M2.5 12mm screws** (part of the screen package). Additionally place the speakers in the shown spots of A01.



Step 13



Insert the **Oak-D-lite camera** into **A01** and tighten it using **2 x M4 10mm screws**.



2 x M4 10 mm screws

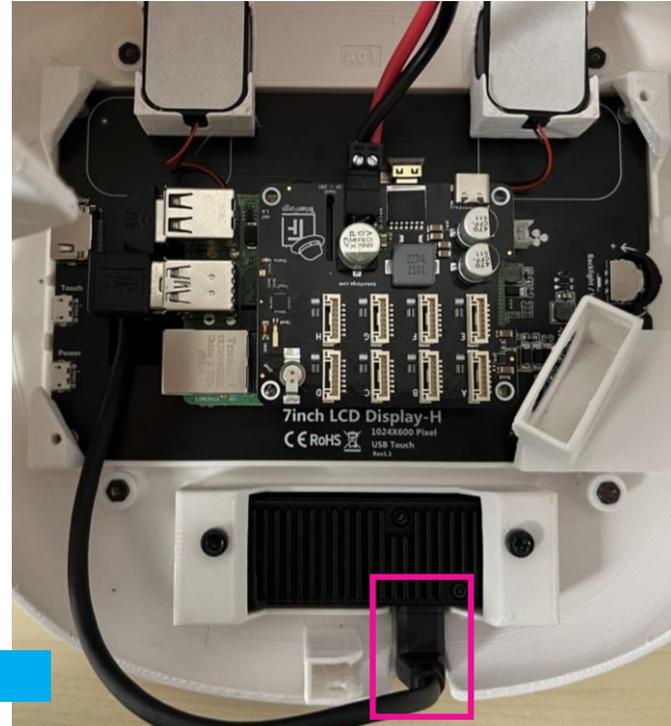
Step 14



Connect the "USB to USB-type-C"-cable from **step 6** into the shown spot of the camera.

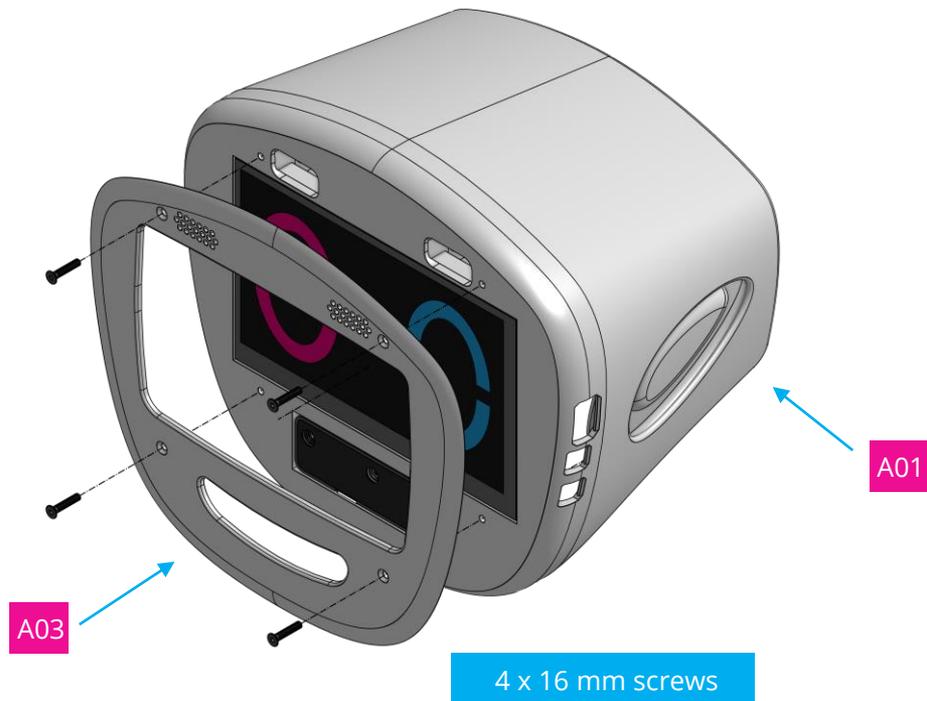


USB to USB-type-C cable



Step 15

Finally, connect **A03** to **A01** using **4 x 16 mm screws**.



Congratulations

You did a great job, pib´s head is assembled!



Well done!



Do you need support?



Or do you need our pib.Box with all non-printable parts?

Or maybe you have some new ideas and improvements?

Please contact us.



team@pib.rocks
Send us an email.



discord.com/invite/GRdpyeDu7P
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