IPTC SAS:
CHASSIS MANUFACTURE AND ASSEMBLY GUIDE

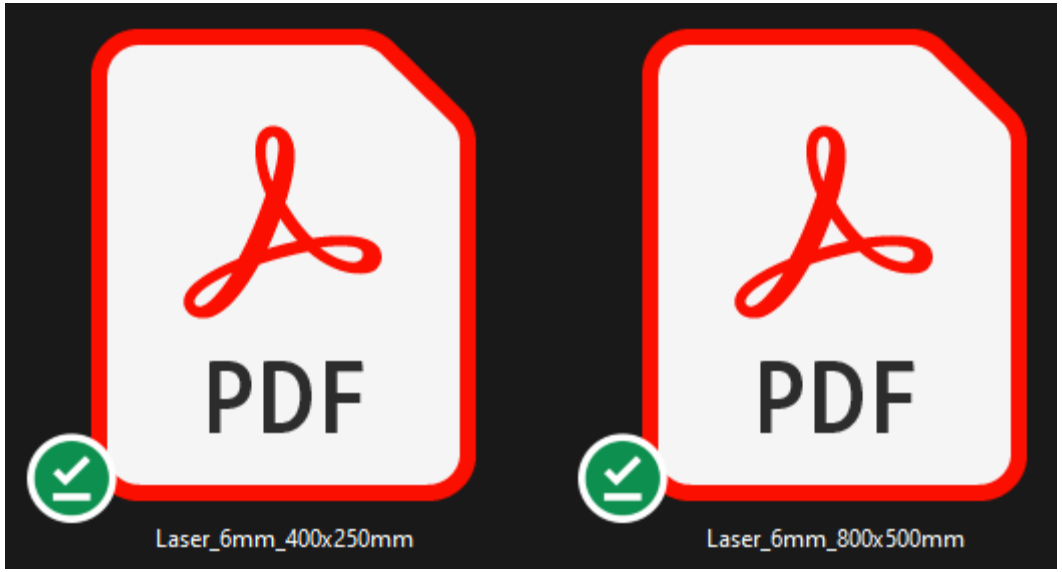
Bill of materials

- Front Panel (1)
- Rear Panel (1)
- Side Panel (2)
- Top Panel (1)
- Bottom Panel (1)
- Spacer Ring (4)
- MCP Board (1)
- SAS Board (1)
- Mean Well IRM-60-24ST AC-DC Converter (1)
- IEC320 AC power connector (1)
- Red NB-418 female banana connector (2)
- Black NB-418 female banana connector (2)
- 6-pin 2.54mm pitch stackable connector (1)
- KCD3 rocker switch (1)
- LA38-20X3 rotary switch (1)
- KCD3 rocker switch (1)
- LA38-20X3 rotary switch (1)
- Female-female panel mount USB connector (2)
- 80 cm Micro USB cable (1)
- 80 cm Mini USB cable (1)
- 3-way 90° interior bracket with M4 threading (8)
- M3 male-female hexagonal spacer, 15 mm (18)
- M2 x 14 mm screw (4)
- M3 x 12 mm screw (10)
- M3 x 18 mm screw (8)
- M4 x 12 mm screw (32)
- M2 nut (4)
- M3 nut (28)
- 16 AWG gauge cable
- 22 AWG gauge cable / jumpers

Tools

- Drill with 3 mm drill bit
- Phillips screwdrivers (for M2, M3 and M4 screws)
- Cutter
- Cable cutter
- Ruler (preferably metallic)
- USB drive
- Liquid cold silicone

- Save the two PDFs in **this folder** in an USB drive and hand it to the LAIMI 2 assistant.
- In LAIMI 2, buy 1 full acrylic sheet (800 mm x 500 mm) of 6 mm of width, and ¼ of a full acrylic sheet (400 mm x 250 mm) of 6 mm of width.
- Ask the LAIMI assistant to laser cut the design saved in each PDF file in their respective acrylic sheet.

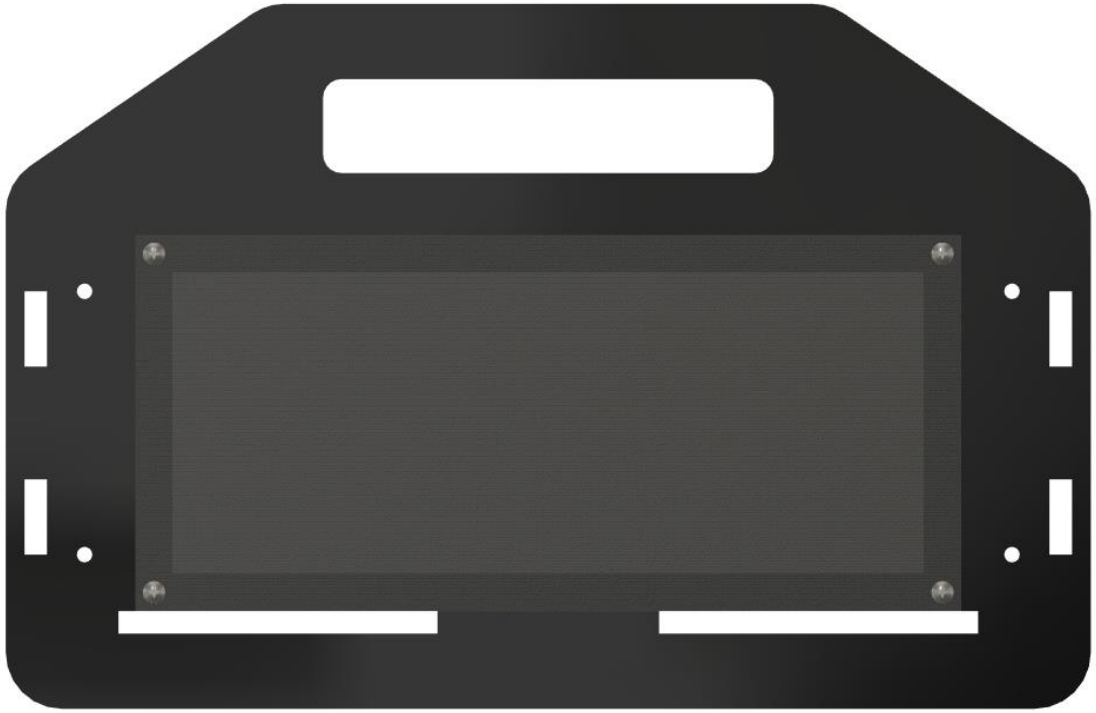


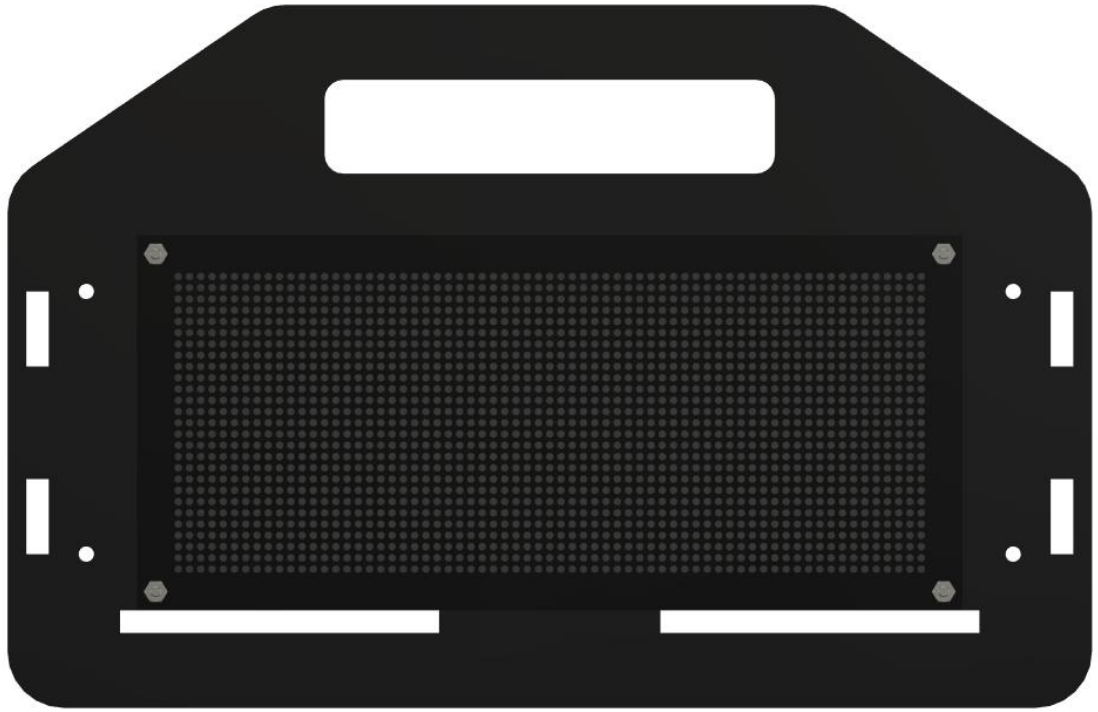
- The kit has two 400 mm x 300 mm dust filter meshes. Use a ruler and a cutter to cut two rectangles in the mesh, each of 220 mm x 100 mm.

- Cut 4 magnetic strips of 220 mm of length, and 4 of 80 mm length.
- Remove the sticker cover from the strips and place them in the borders of the mesh.

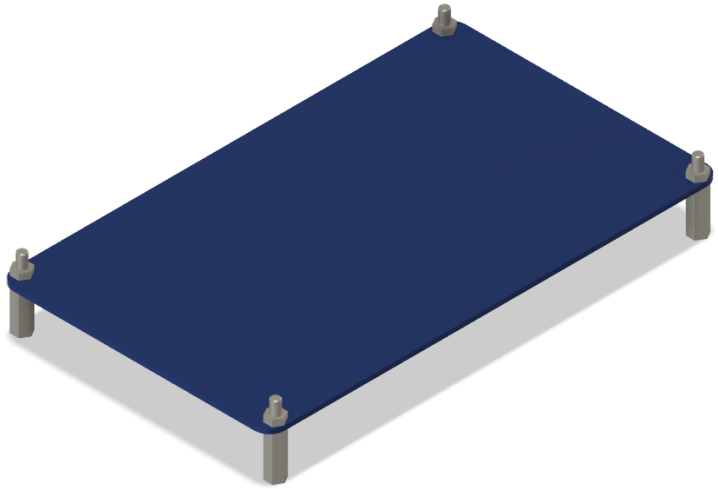
- Use a drill to cut 3 mm holes in each corner of both meshes as shown in the following picture.

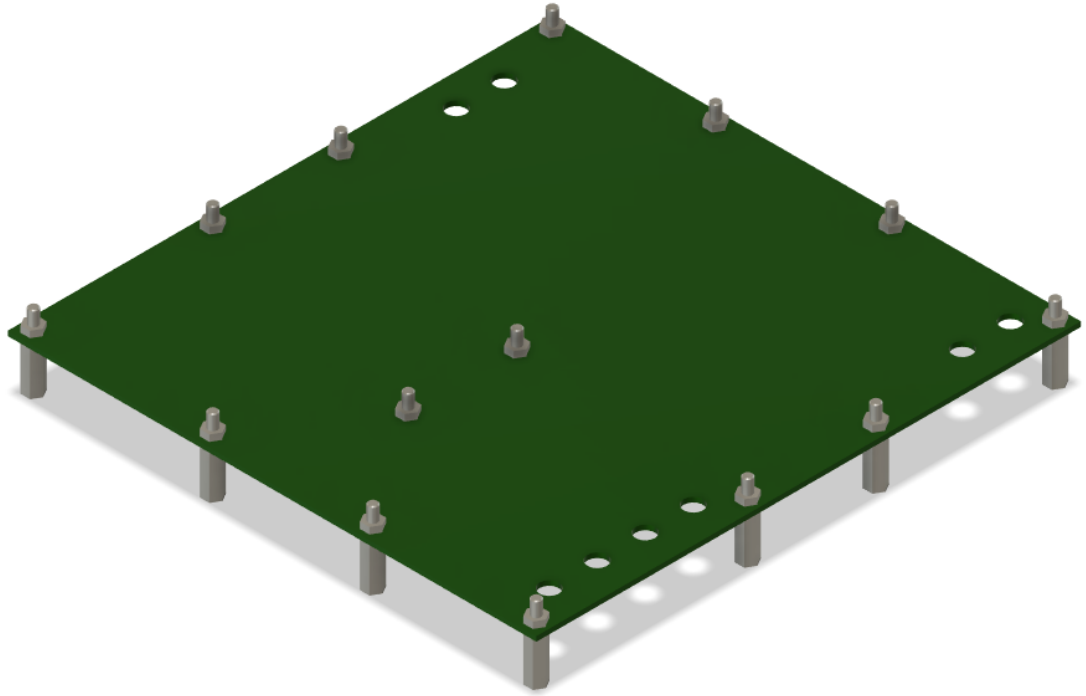
- Place the filters in the lateral panels and secure them with M3 X 12 mm screws and M3 nuts (8 of each)



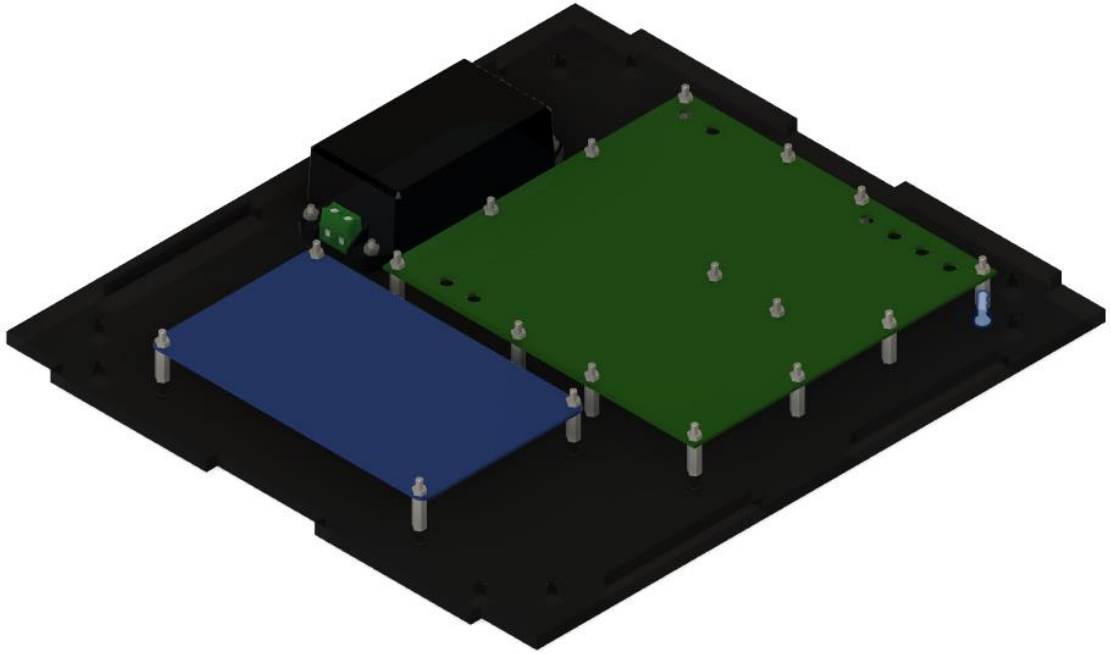


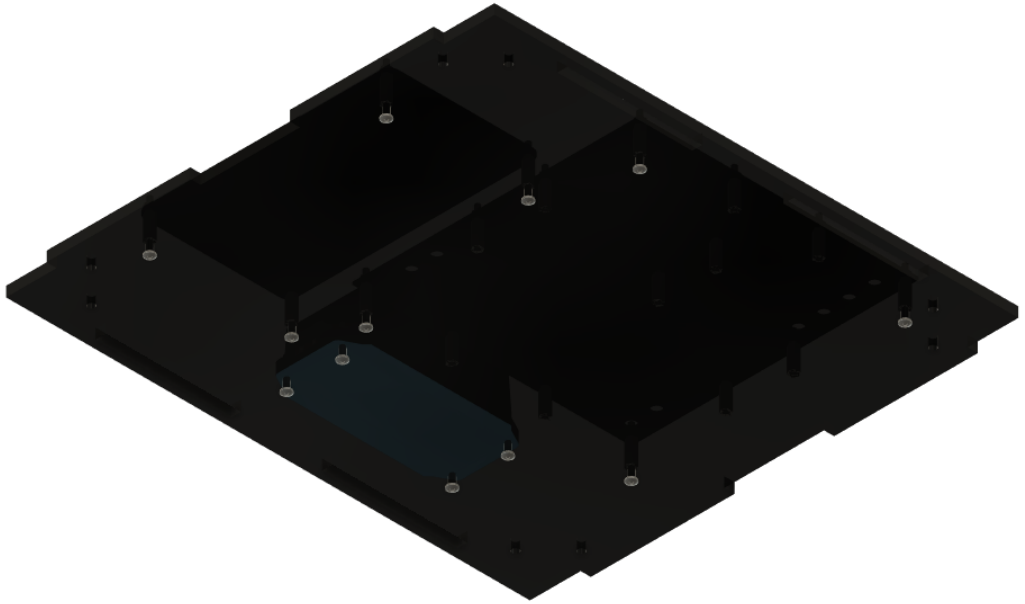
- Place the M3 spacers in the mounting holes in both the SAS and the MCP boards, and secure them with M3 nuts (16 of each).



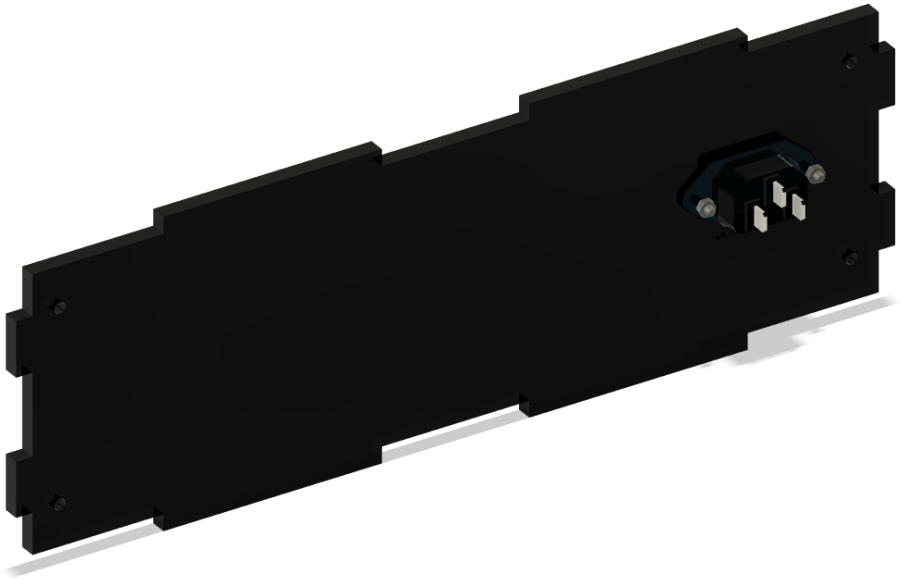


- Secure both boards to the bottom acrylic panel by placing M3 x 12 mm screws (8) into the spacers' threaded holes in each corner.



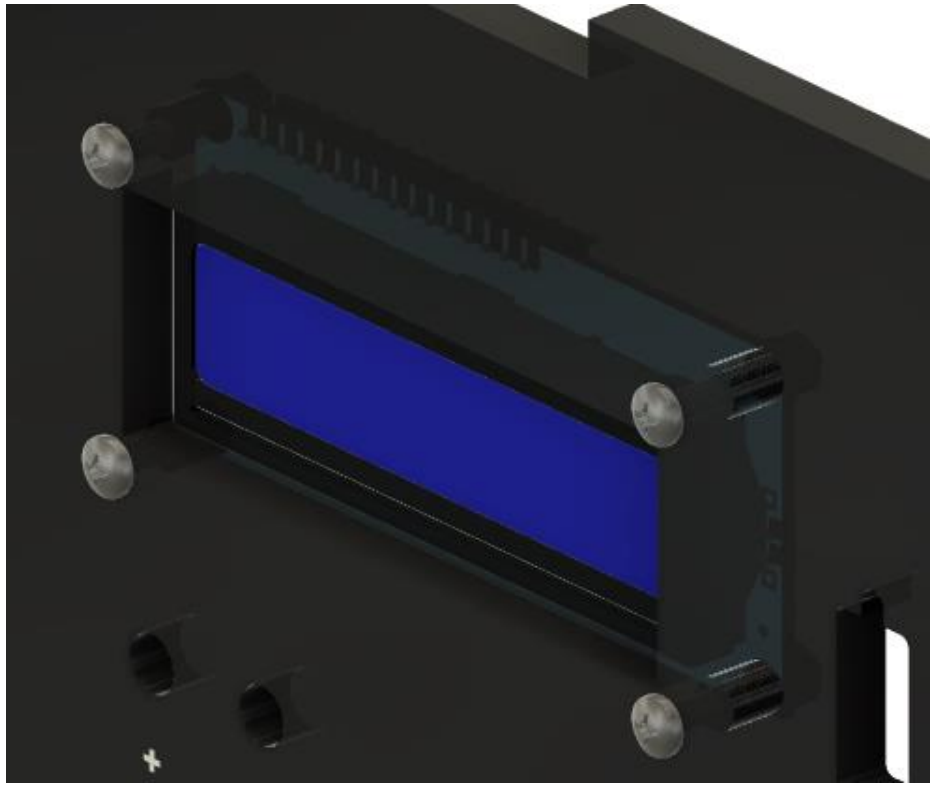


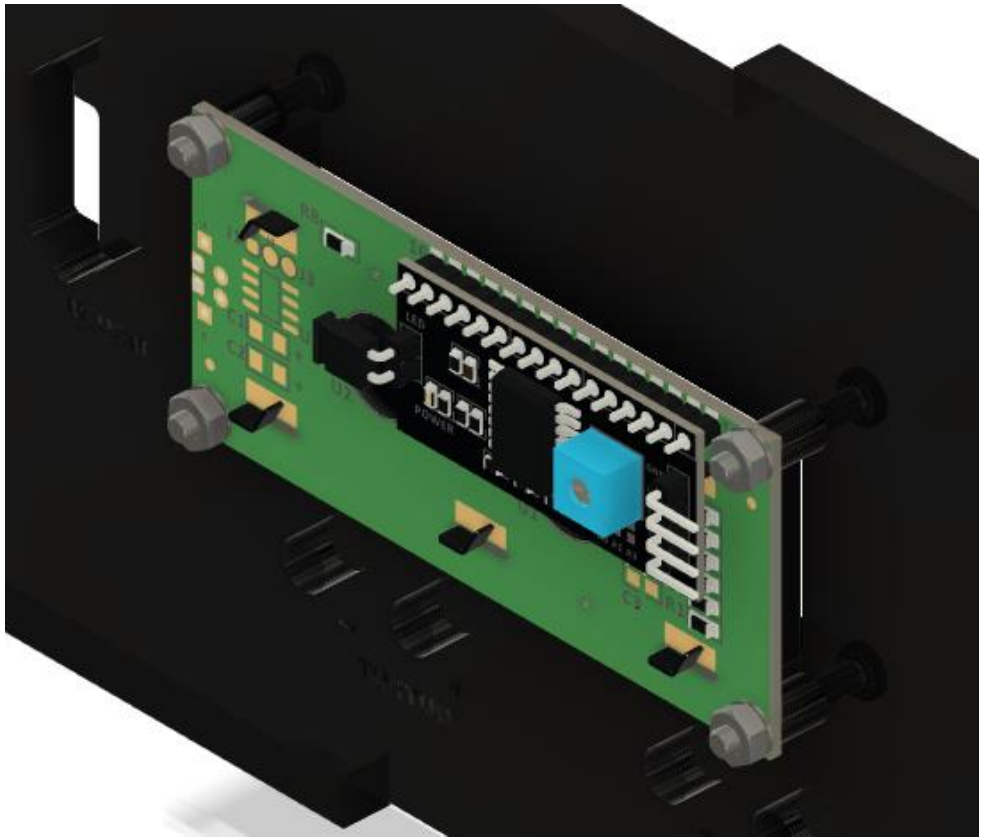
Secure the AC-DC converter by placing M3 x 18 mm screws (4) into the mounting holes, from below the panel, and then tight them with M3 nuts (4).



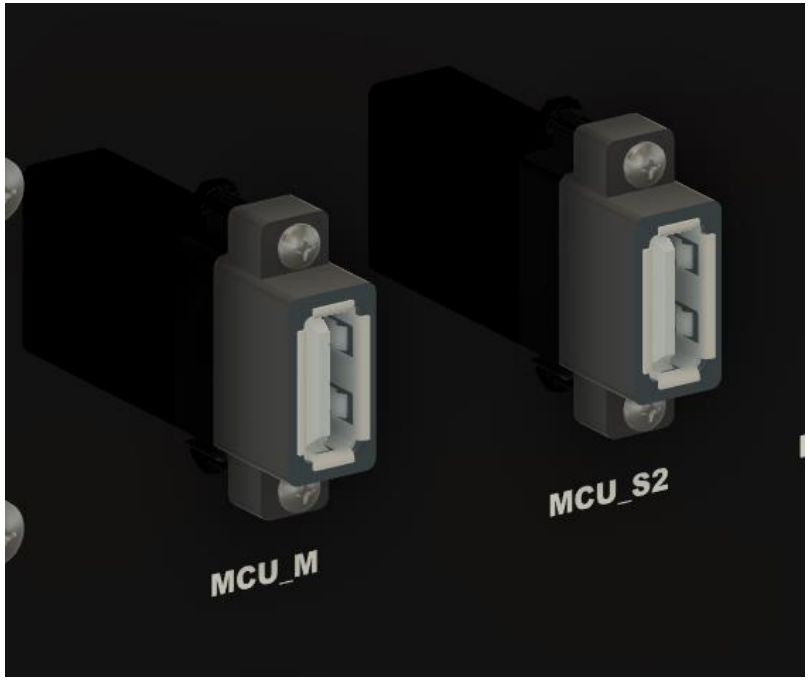
Secure the IEC 320 AC outlet to the rear acrylic panel by placing M3 x 12 mm screws (2) into the the mounting holes and tight them with M3 nuts (2) from the other side of the panel.
Be sure to place it so that the external connector is on the left of the panel.

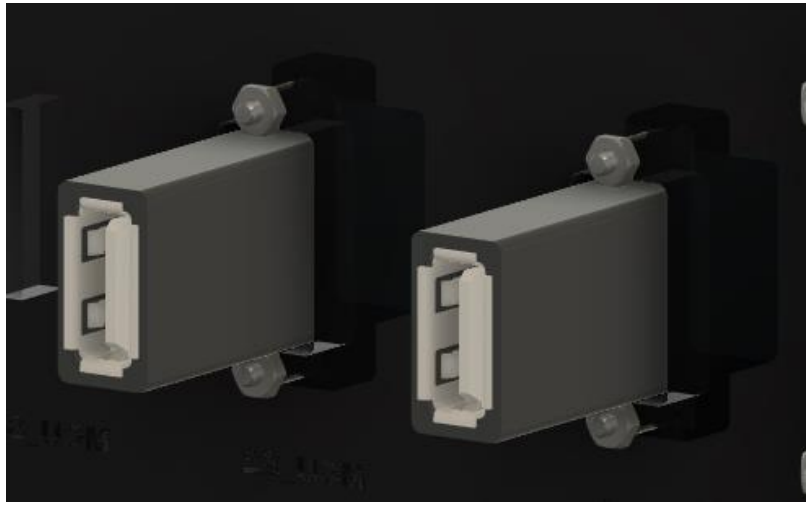
Secure the LCD1602 display to the front panel with M3 x 18 mm screws, the acrylic ring spacers, M3 nuts, and M3 washers (4 of each).



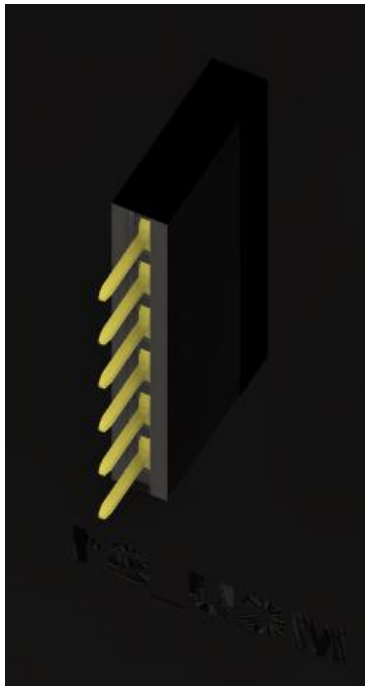


Secure the USB panel-mount connector to the front panel with M2 x 14 mm screws and M2 nuts (4 of each).





Place the 6-pin header to the front panel. Secure it by applying liquid cold silicone from behind the panel.



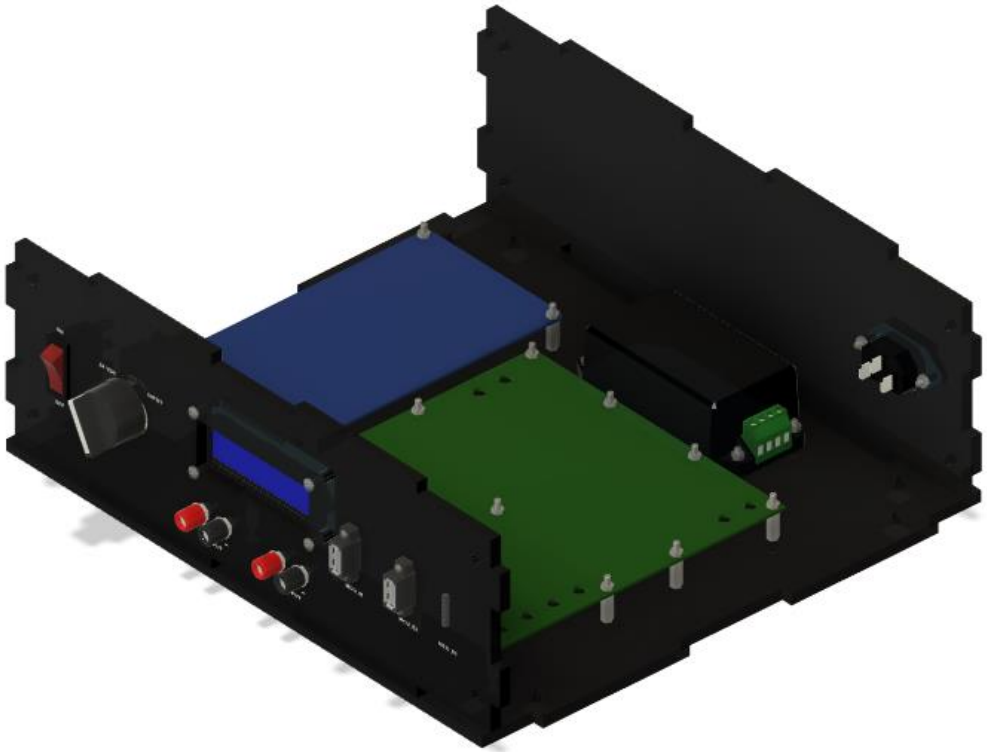
Secure the banana connectors to the front panel. Note that they come with their own nuts, which are tightened from behind the panel.

Place the rocker switch in the front panel. Be sure to do so accordingly to the ON/OFF notation.

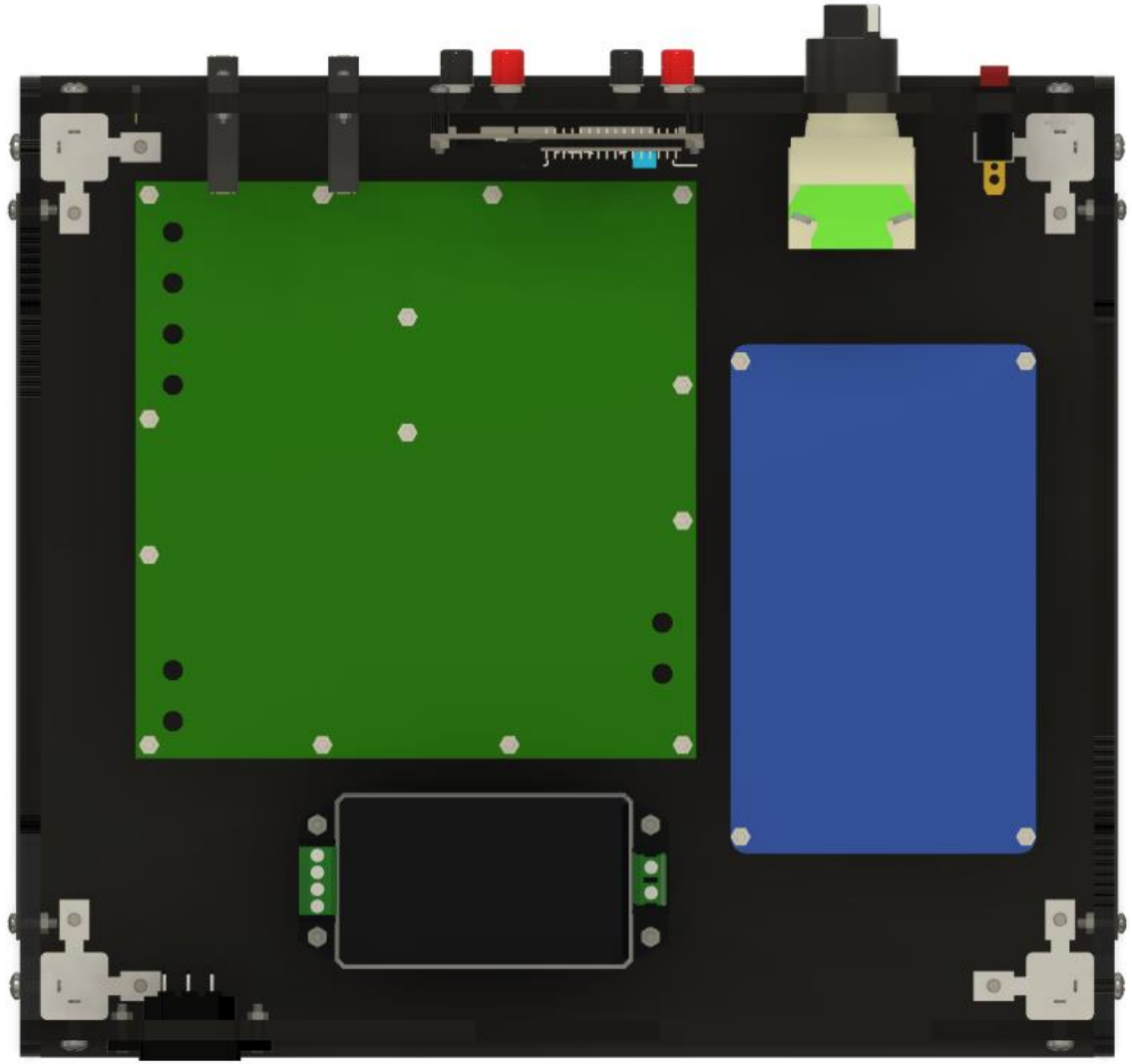
- Place the rotatory switch in the front panel. First, remove the knob and the nut, place the switch from behing the panel, place and tight the nut from the front of the panel, and then place again the knob.

- The front panel should look like this.

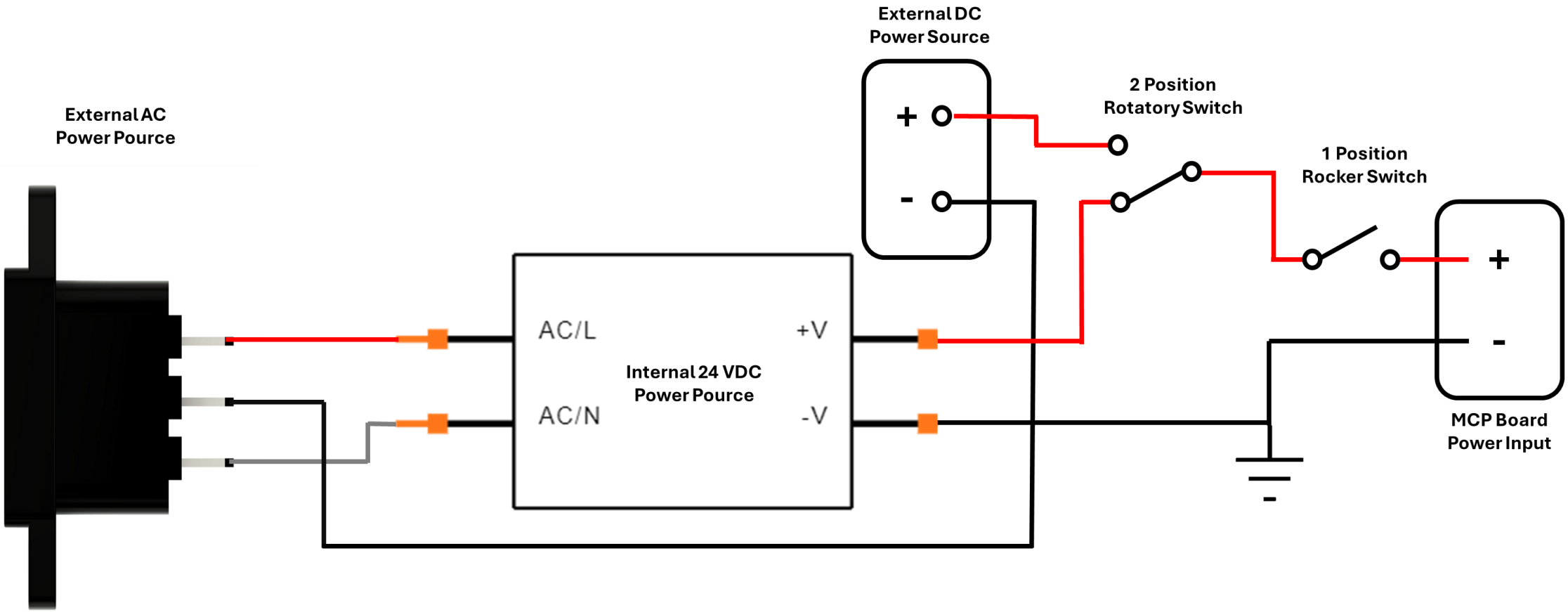
- Place the front and back panels into the base panel.
- Then, place the lateral panels.



- Place the 3-way 90° inner Brackets (4) in the **bottom corners only**. Secure them with M4 screws (16).

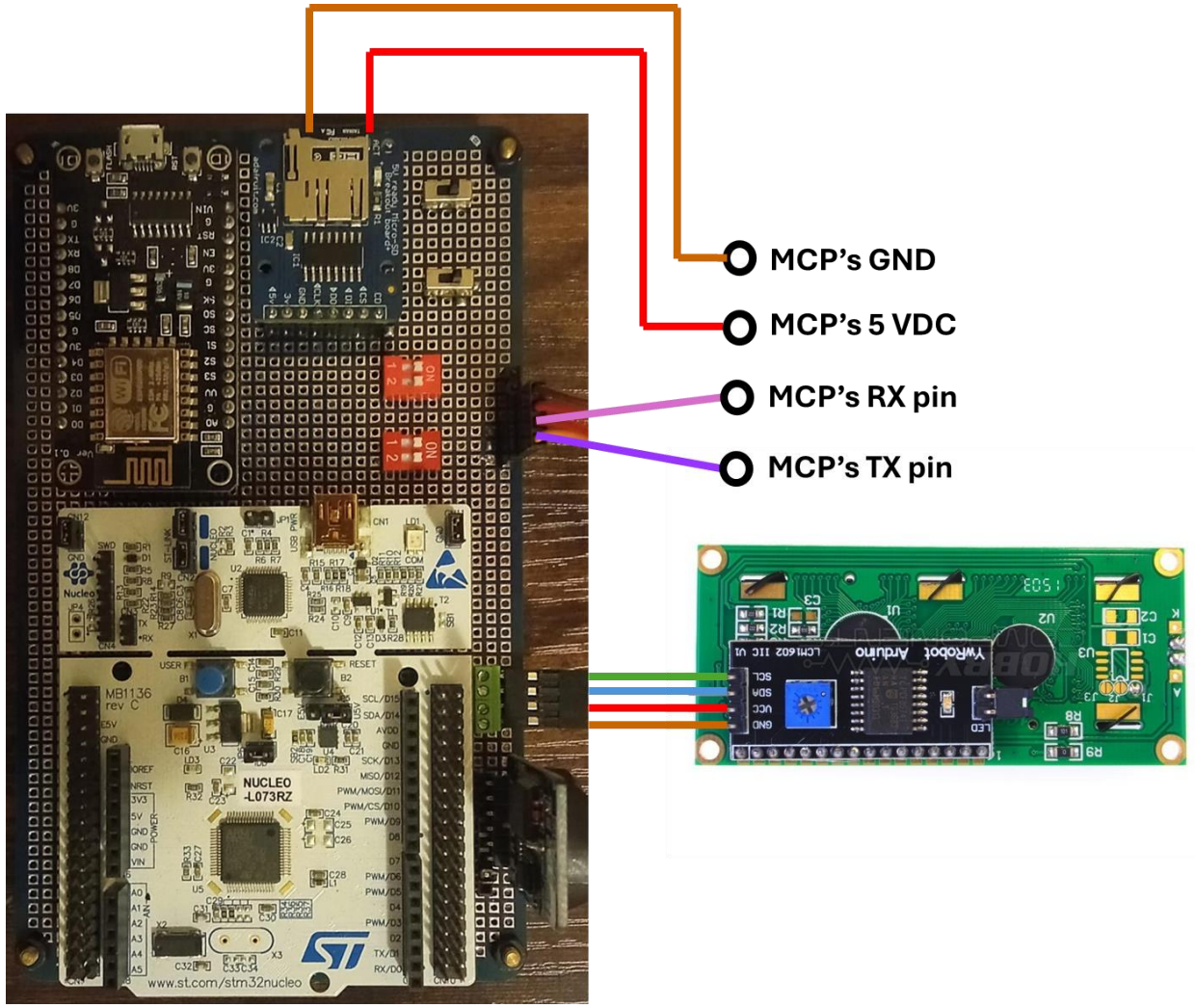


- Do the following electrical connections using 16 AWG cables.



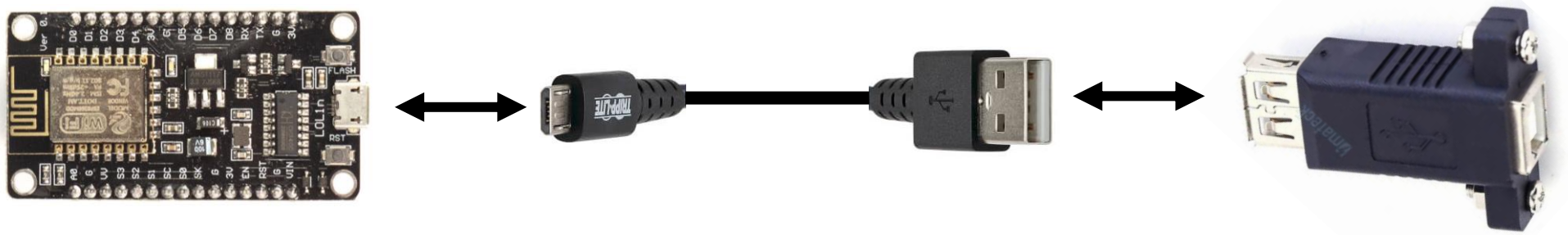
- Do the following electrical connections using 22 AWG cables / jumpers.

- Remove the MicroSD card reader to uncover a terminal block like the following, which is the SAS board power input:

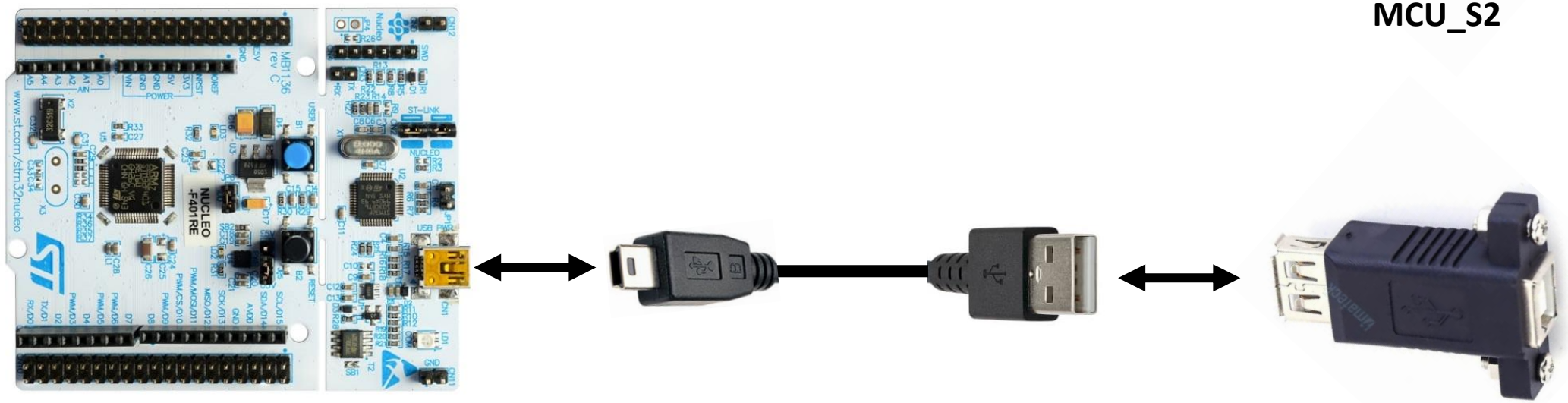


- Plug the Micro-B USB connector to the NodeMCU, and the respective USB A connector to the MCU_S2 panel mount USB connector.

- Plug the Mini-B USB connector to the Nucleo-64, and the respective USB A connector to the MCU_M panel mount USB connector.

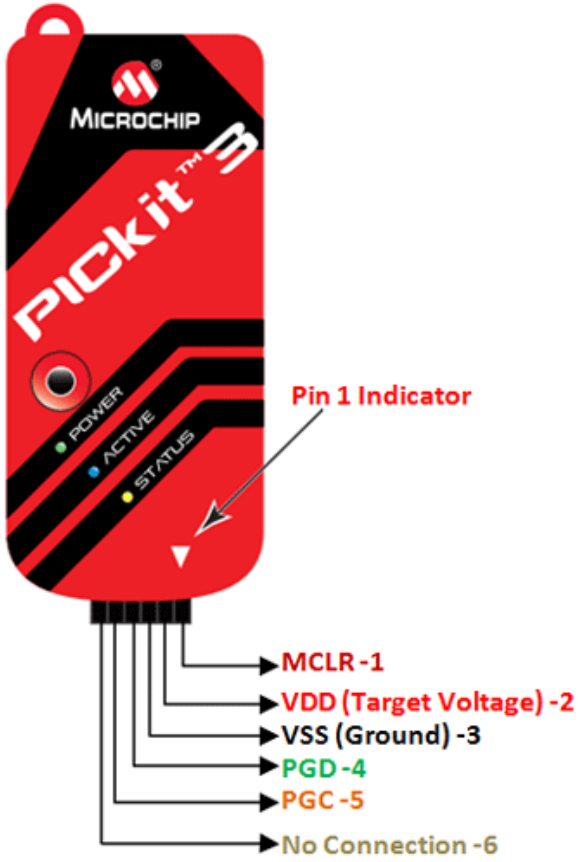


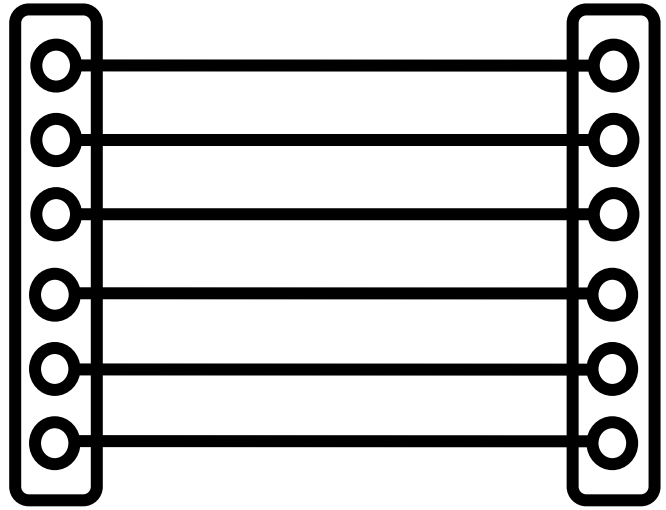
MCU_S2



MCU_M

- Use female-to-female 22 AWG jumpers to connect the communication pins from the MCP board to the header in the chassis front panel, according to the PIC Kit 3 connections seen below:



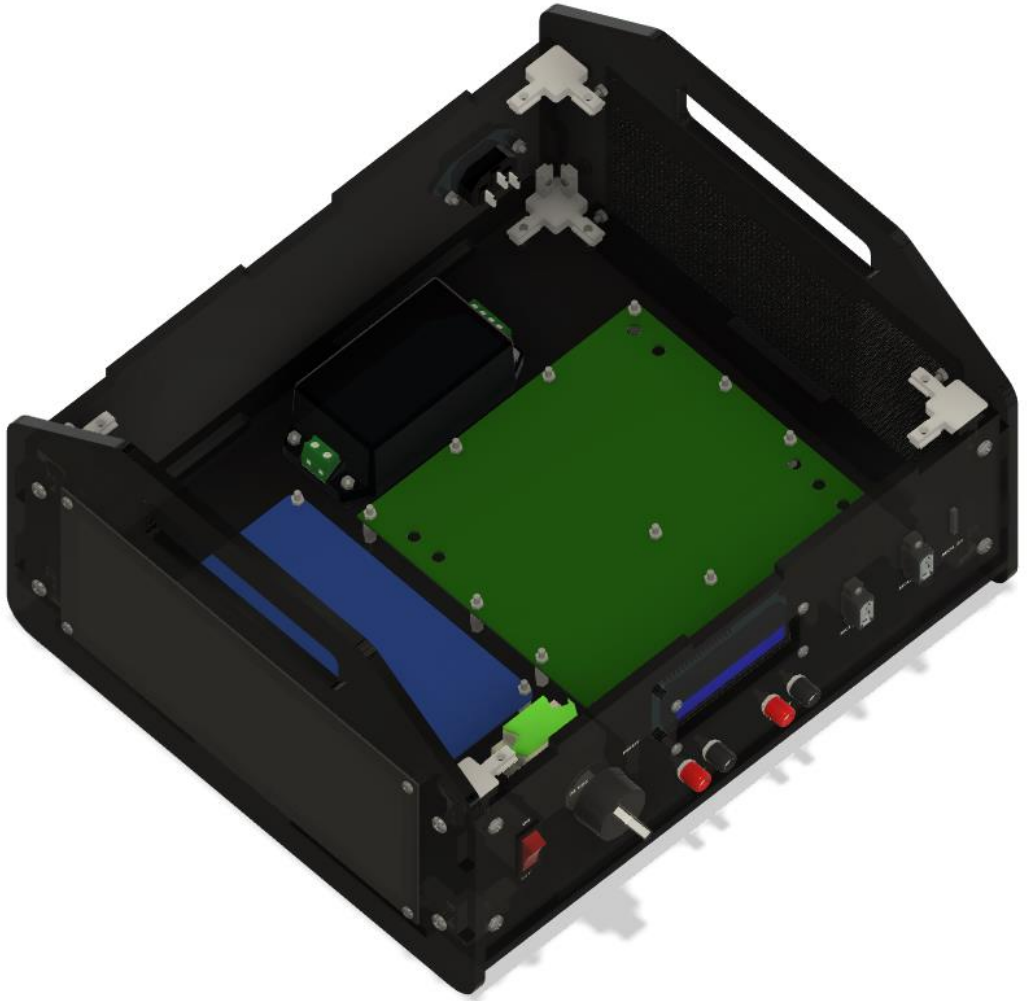


MCP Board Communication Pins

Chasis Header Pins

- **Be sure to test all the electrical connections before proceeding with the final steps.**

- Place the remaining 3-way 90° inner brackets (4) in the top corners.
- Secure them with M4 screws (8).



- Place the top panel.
- Secure it into the 3-way 90° inner brackets with M4 screws (8).
- The chassis is assembled!