REFLEXES MACHINE BUILD

(Rev 24/07/2026)

REFLEXES MACHINE BUILD

1



Install all the Modulino Led Matrix in the central_body using M2.5 x 6mm screw

Leave the 2 side slots empty for easy assembling process

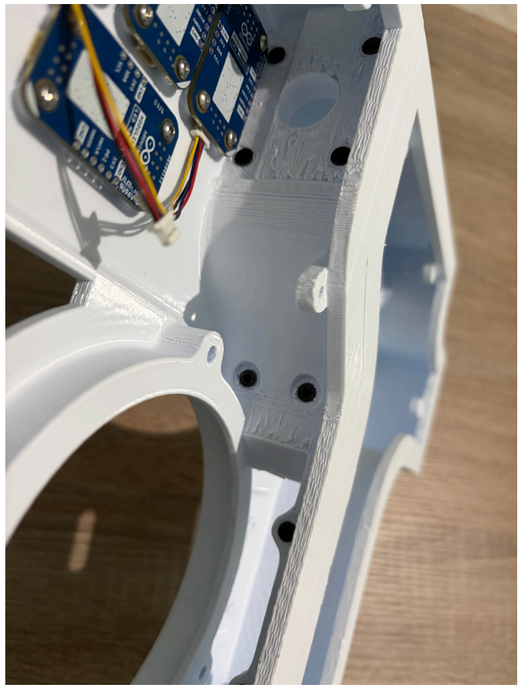


2



Attach the sides body with M3 x 16mm screws

then install the 2 missing Modulino Led Matrix



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3



With the help of a soldering iron (240° C) install the threated inserts M3 X 4.5 x 5 mm inside handlers and corners holes

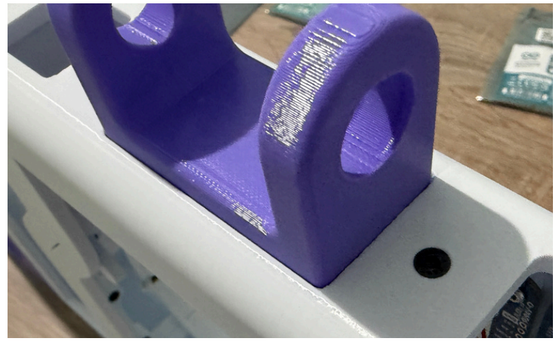


Then attach corners and handlers into the main body with M3 x 10mm screws

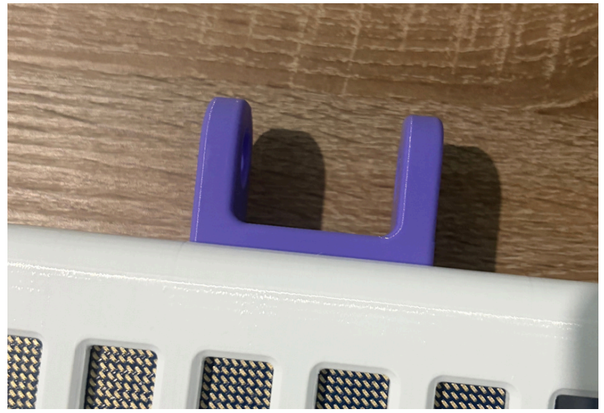
4



Follow this image to connect the Modulino Cables

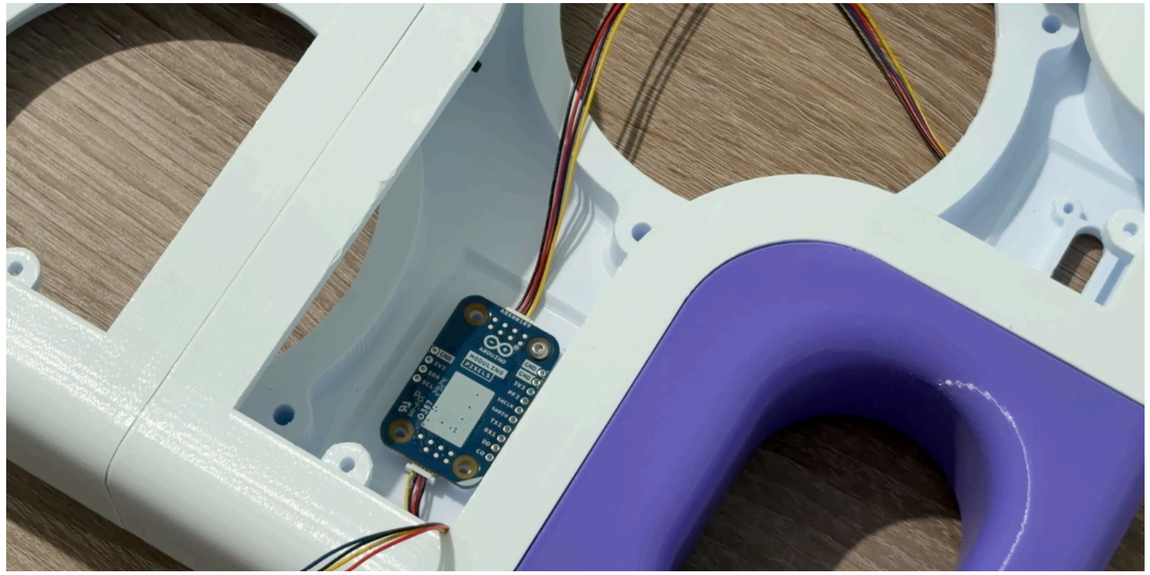


Install the camera_support into the main body using 2 M3 x 16mm screws (rember to pass the camera cable before installing the support)



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5



Install the 4 Modulino Pixels in their slots.

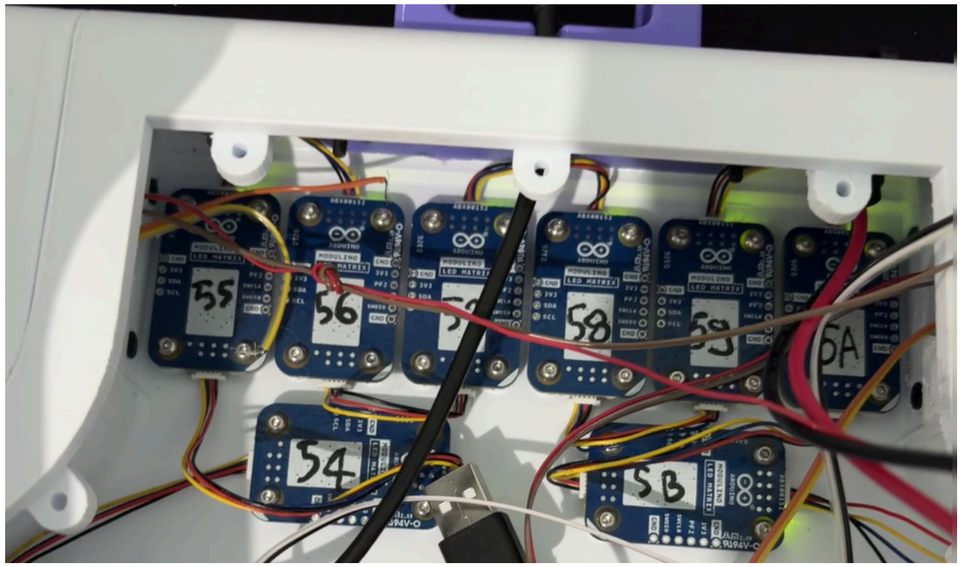
attach a long cable to connect the Modulino pixels each other



6

Mark the 4 Modulino pixels from 50-53 (no order required)

then
mark the Modulino Led Matrix from left to right, 54-59,5A,5B



7

Using the Arduino App Lab or Arduino IDE connect each Modulino at time and change the address with the specific script.

The address changer script is available into Script Examples of Arduino IDE.

The changing process is very simple and straightfoward.

8



Using some instant glue attach the power btn holder to the main body

on the other side of the camera install the power plug and it’s holder (same method of the btn)



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9

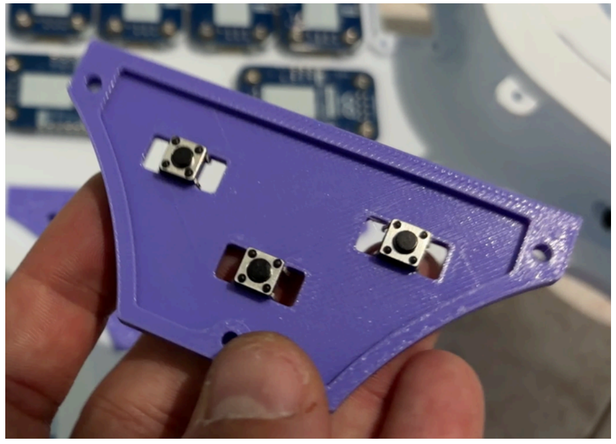


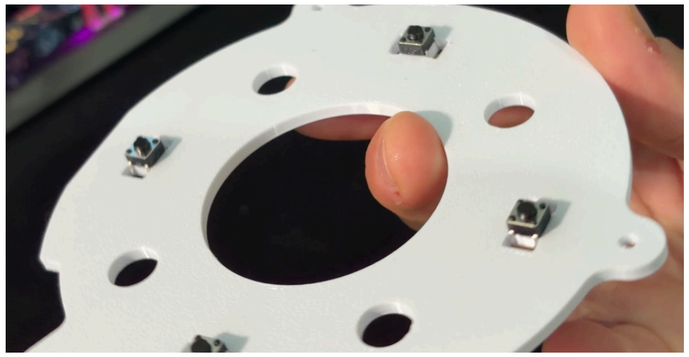


Using instant glue fix the central btns support to the main body and place the button inside their holes

Using instant glue fix the central btns to the back cover of central btns support,

then attach everything with 3M x 6mm screws



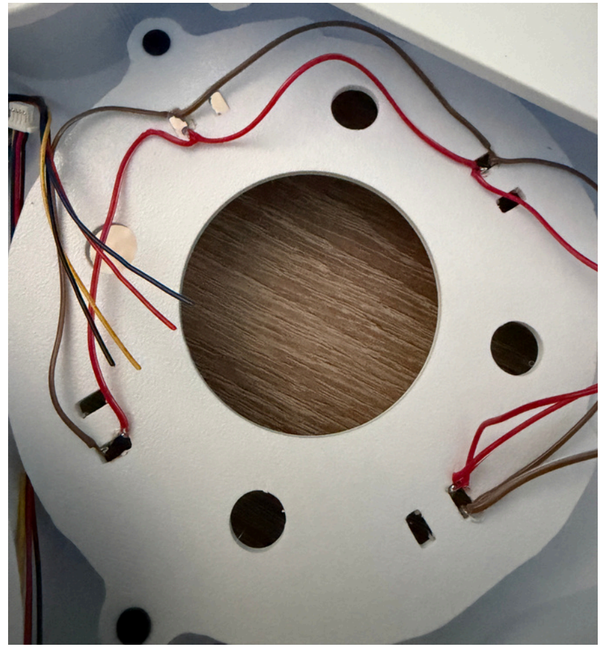


10

Glue the 4 tactile switch into button base (for each button base)

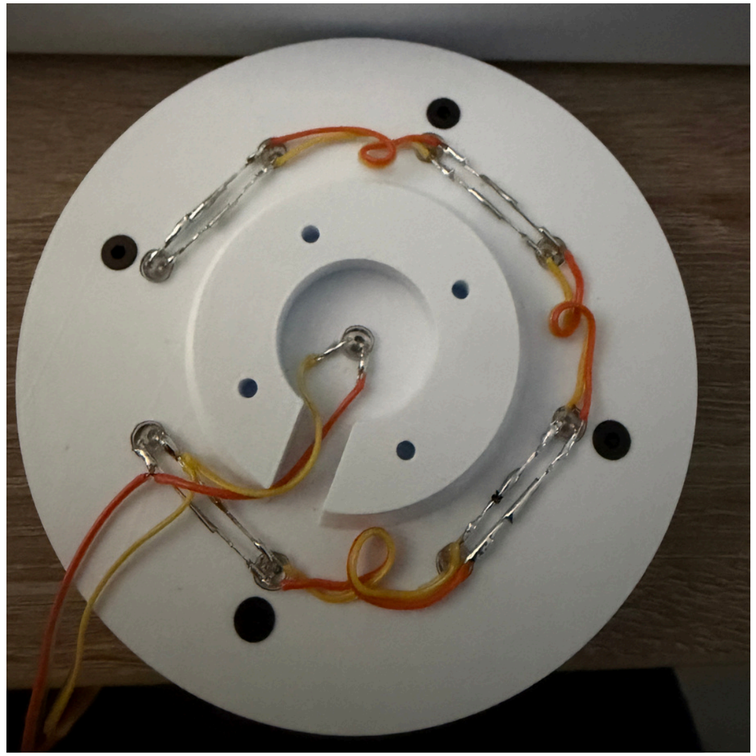
Choose one side of each tactile switch and solder one wire in all internal pins (all connected together) and another one wire for the external pins.

Then attach the button base to the main body with M3 screws



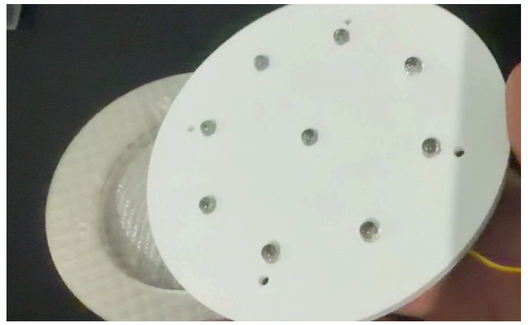
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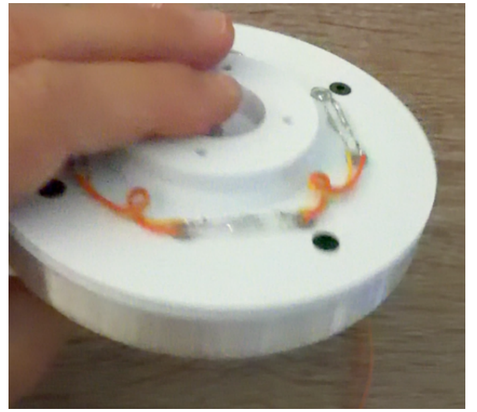


Follow this image and place the 5mm LEDs (9 for each button) then solder them as you can see (check the long and short pin of led).
Repeat for each button.

12



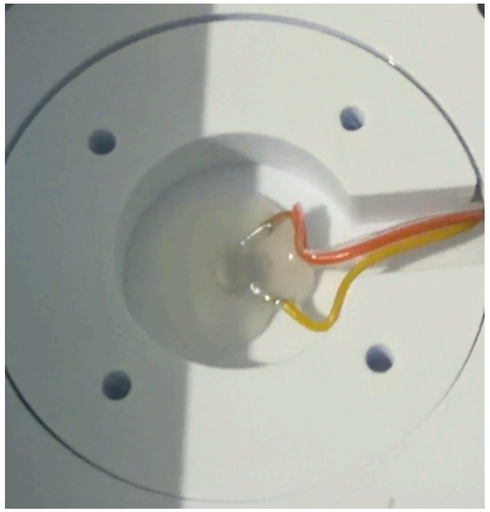
Attach the button trasparent body with the M3 screws





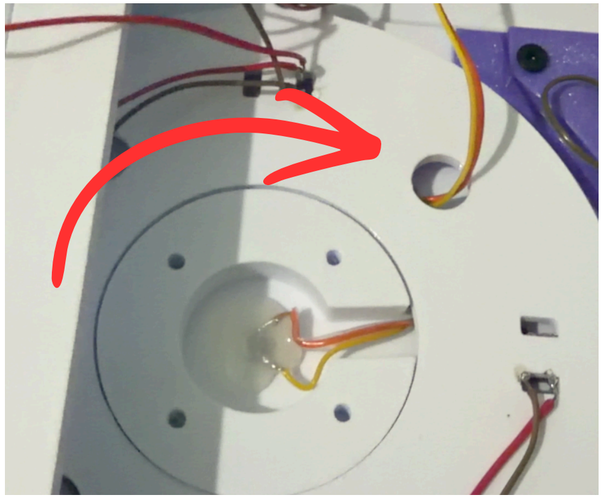
You can test the buttons led with a desk power supply or by connecting gnd-vin from Arduino uno Q

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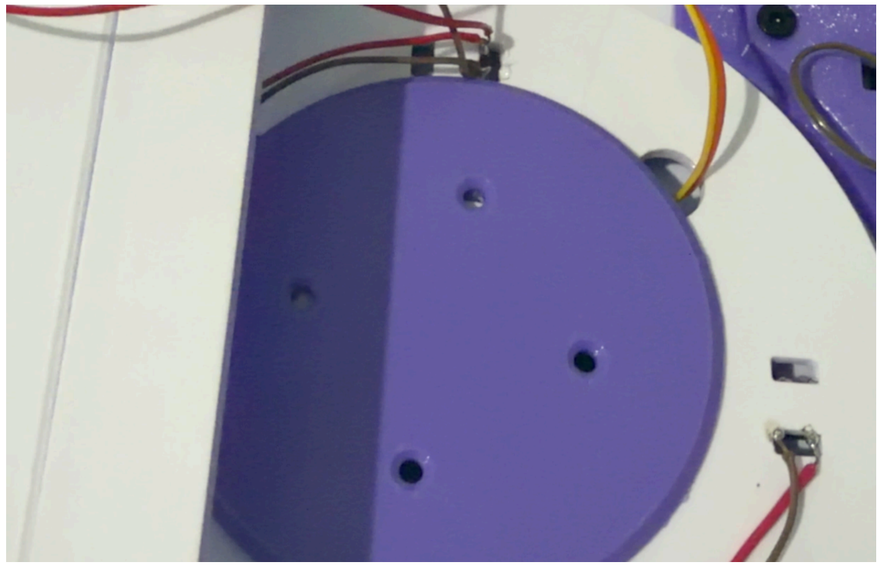


You can add hot glue on leds pins for safety

Pass the leds wires into one of button base holes



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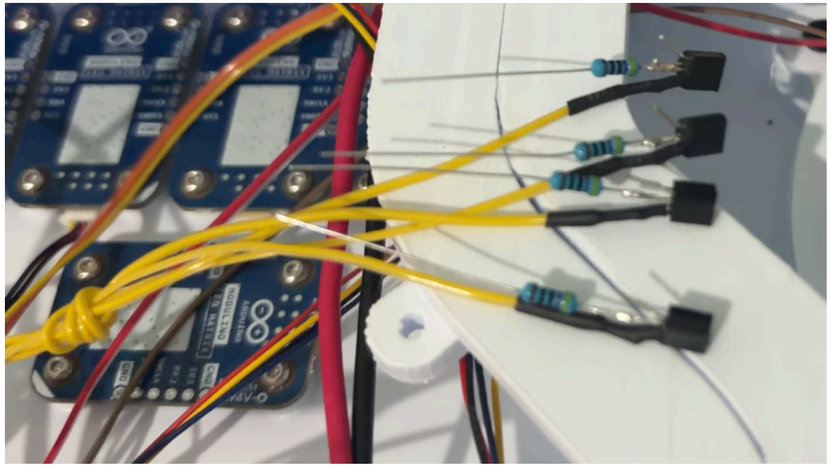
Block each button with the button block and M3 screws

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Install the camera support body, it’s very easy.

16



Install the transistor NPN S8050 for each of the 4 button.

While seeing the flat face of the transistor:

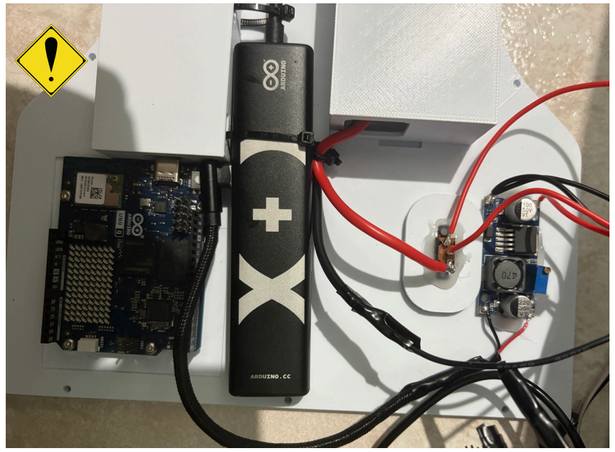
- sx pin→ gnd
- central pin → 470 Ω Resistor → Arduino pin
- dx pin → negative pin of leds

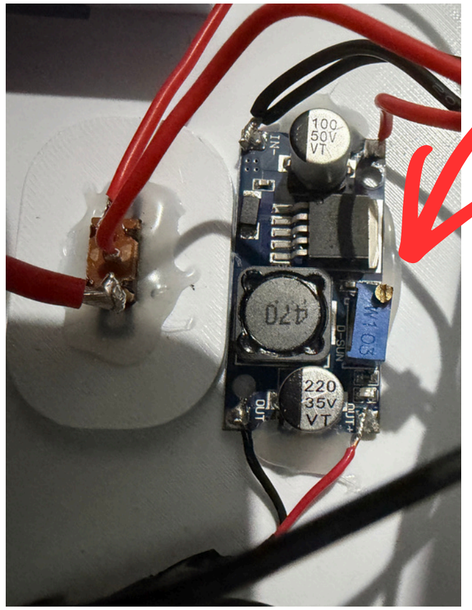
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attach the componets on the inside of the central body with screws, hot glue e zip tile as shown in the image

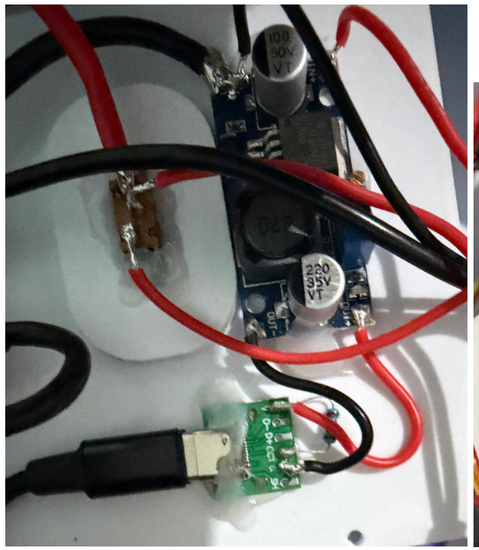
in this image the ext power cable and battery cable are swapped in the 2 position switch (my bad fixed later)

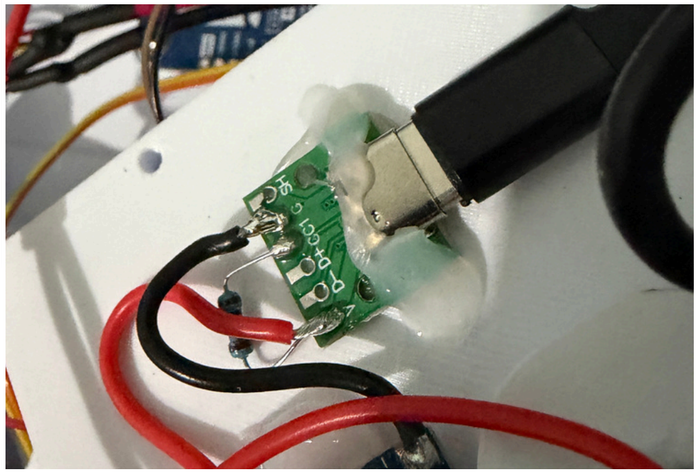




with the help of a screwdriver change the Vout of the step-down voltage regulator to 5.2V

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Solder a 10K resistor between V and CC1 pins of the usb female connector.
Then V and G (gnd) to the output of the step-down voltage regulator as shown.

The USB connector goes from the female usb connector to the arduino hub in the c port (thunderbolt ⚡)

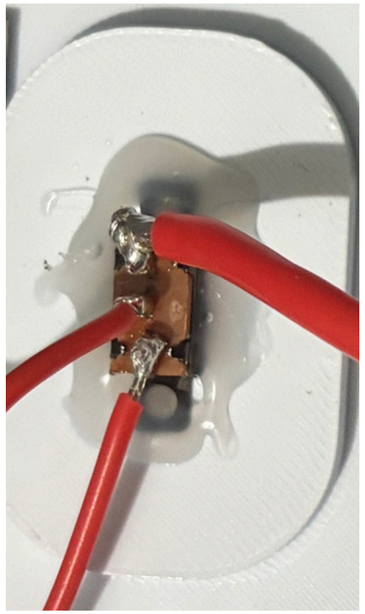
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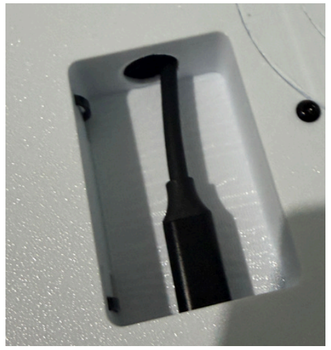


the 2 position switch (3 pins) must be connected as the image on top:

This is the correct one



upper-pin → to the + pin of the battery connector
middle-pin → goes fron the power button
lower-pin → to the ext power supply connector



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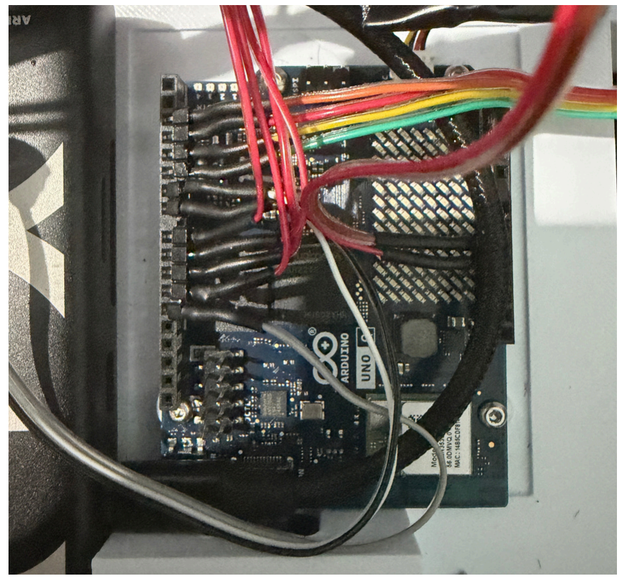
Connect the arduino hub usb c to the arduino uno Q board

Then connect each gnd together and each positive together and then connect it to gnd-5v pins on the arduino uno q

D2 -> LED button 1 (via transistor)
D3 -> LED button 2 (via transistor)
D4 -> LED button 3 (via transistor)
D5 -> LED button 4 (via transistor)

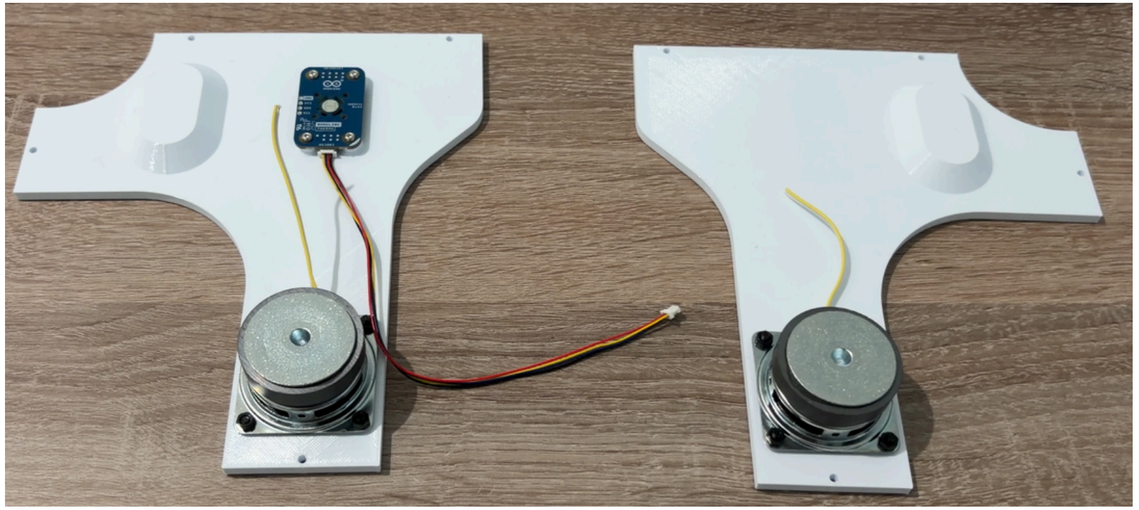
D8 -> Game button 1
D9 -> Game button 2
D10 -> Game button 3
D11 -> Game button 4

D6 -> START button
D12 -> RESET button
D7 -> OPTIONS button



(Tactile Switch need one pin on a digital pin and the other one to gnd)

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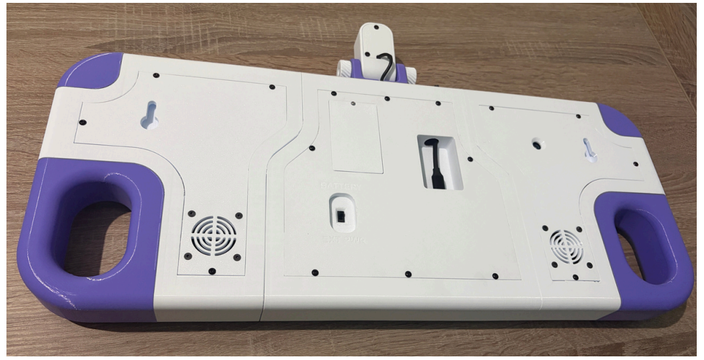


Connect the speakers and the Modulino Thermo to the side back covers, with M2.5 and M3 screws

then connect the modulino connector one to another Modulino (pixels) ane the other one to the qwiic connector of the Arduino UNO Q

Connect the usb camera e the usb controller of the speakers to the arduino hub

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Attach the back covers with M3 screws

Connect the battery and close the battery slot with his cover and one M3 screw





Download the AppLab App import it in your arduino uno Q and you’re ready to go!!

Thanks!