Smarti Pi Touch Pro W

Assembly instructions

Questions or missing parts? Email info@smarticase.com

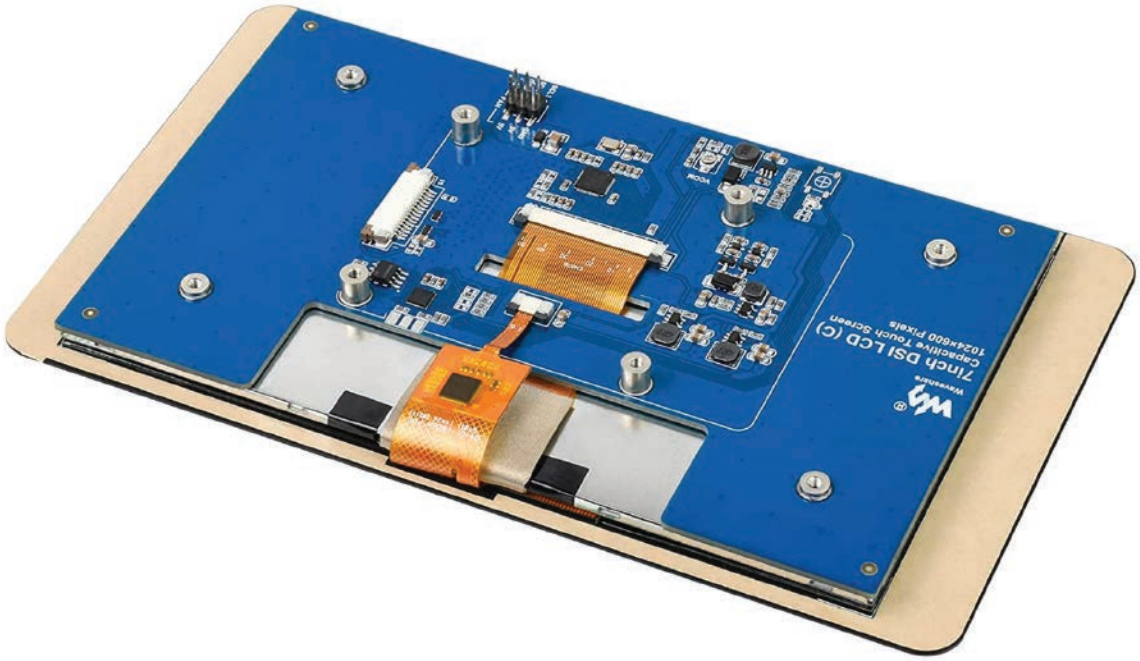
Drawings and CAD files are available at smarticase.com

Compatiblity

These are instructions to assemble the SmartiPi Touch Pro W.
The SmartiPi Touch Pro W is compatible with the
- Waveshare Capacitive Touch 1024×600 DSI display (Model/Sku 20429)
-Raspberry Pi 4,and 5

Product page for the Waveshare display
https://www.waveshare.com/product/raspberry-pi/displays/7inch-dsi-lcd-c.htm

Drivers and setup for the display are at the link below. These are required for it to function.
https://www.waveshare.com/wiki/7inch_DSI_LCD_(C)



Raspberry Pi Bullseye issues
Pi OS Bullseye was released in November 2021. There are a number of issues rotating the camera image in Bullseye. Raspistill and raspivid rotation are not supported. If you are having issues rotating the camera image , please try Pi OS Buster. It is available in the Raspberry Pi imager under Raspberry Pi OS (other). Buster will be supported until 2024.

Using this case with Raspberry Pi 5

In April 2024 a new gold colored Raspberry Pi 5 display ribbon cable was added to this kit. This display cable makes it compatible with Raspberry Pi 5.

When using this case with Pi 5 there will be a warning in Pi OS thats says

This power supply is not capable of supplying 5A
Power to peripherals will be restricted

There are no communication lines in our splitter cable therefore the Raspberry Pi will not be able to detect a 5A power supply even if it is connected. Therefore it is not possible to prevent this message from appearing.

You can overide the restricting of the current to the USB ports by doing one of the two things below.

1 - Adding *usb_max_current_enable=1* in /boot/firmware/config.txt

OR

2 - Enabling USB max current on the Pi OS desktop GUI under preferences -> configuration

Once enabled the Pi5 will not restrict power to the peripherals and will allow 1600mA to the USB ports.

One thing to note is that even if you are using a 5A power supply, our splitter cable is only rated for 3A. If you try to draw more than 3A through our splitter, the voltage will drop too low for the Raspberry Pi to function and it will reboot.

Power supply

Always use a UL or CE marked wall power supply with the included splitter cable. Use a wall power supply that can deliver enough current for your application. For best results, use a 5.1 volt power supply to avoid low voltage warnings on the display. The official Raspberry Pi power supply is recommended.

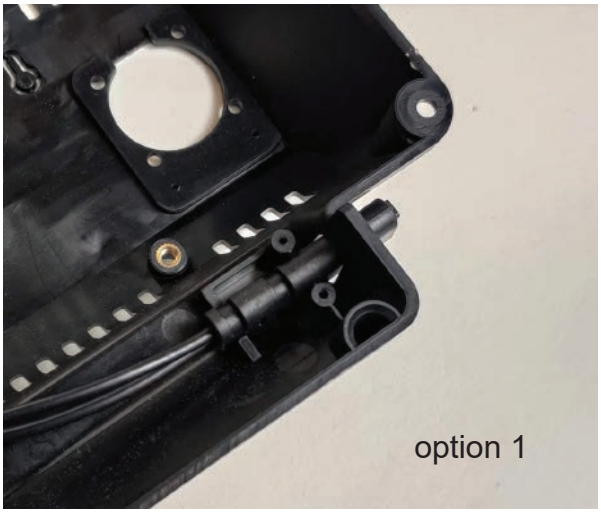
The splitter cable is only for use with the SmartiPi Touch Pro W.

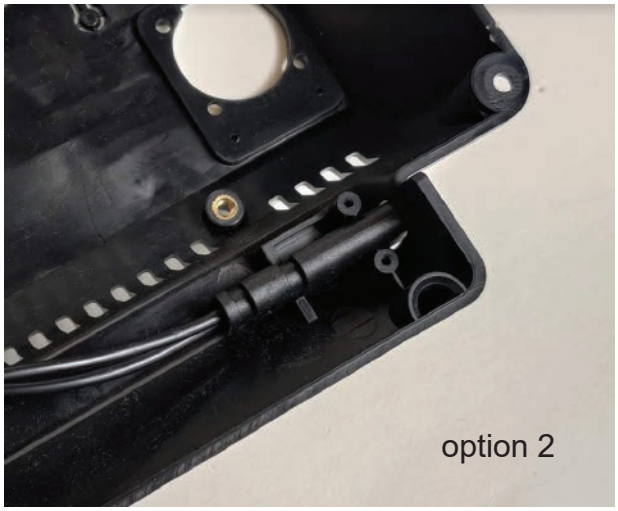
5.1 V 3A USB-C Power supply recommended

Also compatible with the Raspberry Pi 27W power supply, but only up to 3A

Step 1

Insert the female end into the back cover as shown below. The cable can be assembled in either of two positions. Option 1 extends further out for easier access. Option 2 is the more compact option.





Step 2

Use the two small black screws to secure the small plastic retaining part to the back cover. This will hold the power cable in the case.

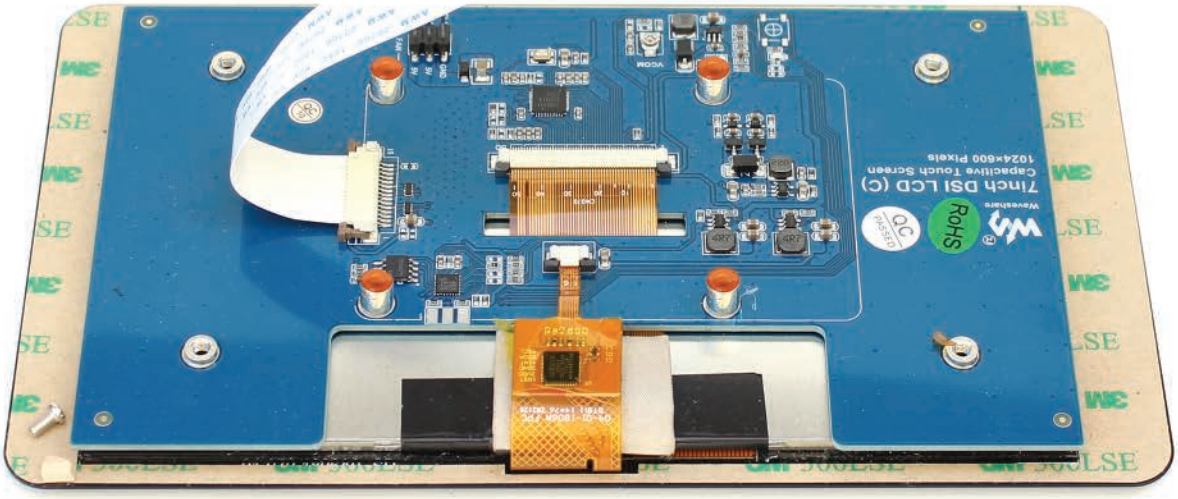
Step 3

Assemble the metal base on the bottom of the plastic base. The metal base can only properly assemble onto the base one way. Please make sure all of the holes are aligned. Use the four silver screws to attach the metal base to the plastic base. Assemble the screws as shown in the photo. Then assemble the adhesive rubber feet in the locations show below.

Step 4

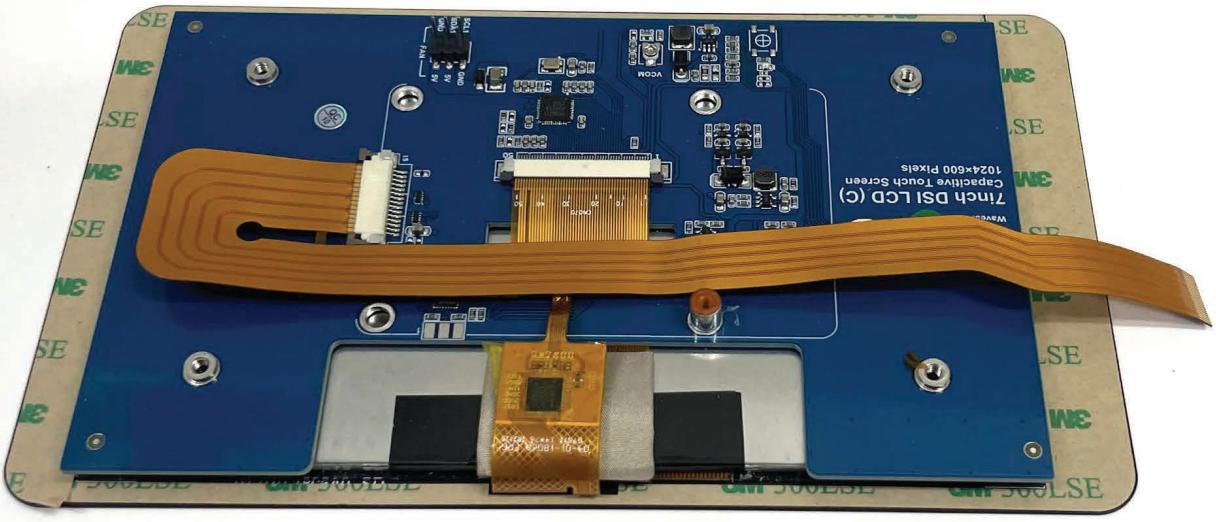
For Pi 4

Connect one of the white ribbon cables with contact facing up to the display connector



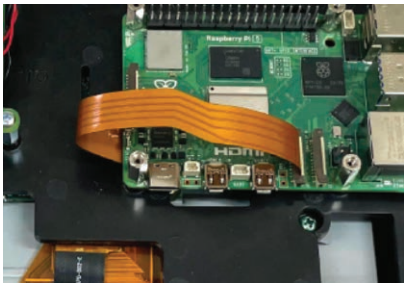
For Pi 5

Connect the gold ribbon cable to the display connector as shown below

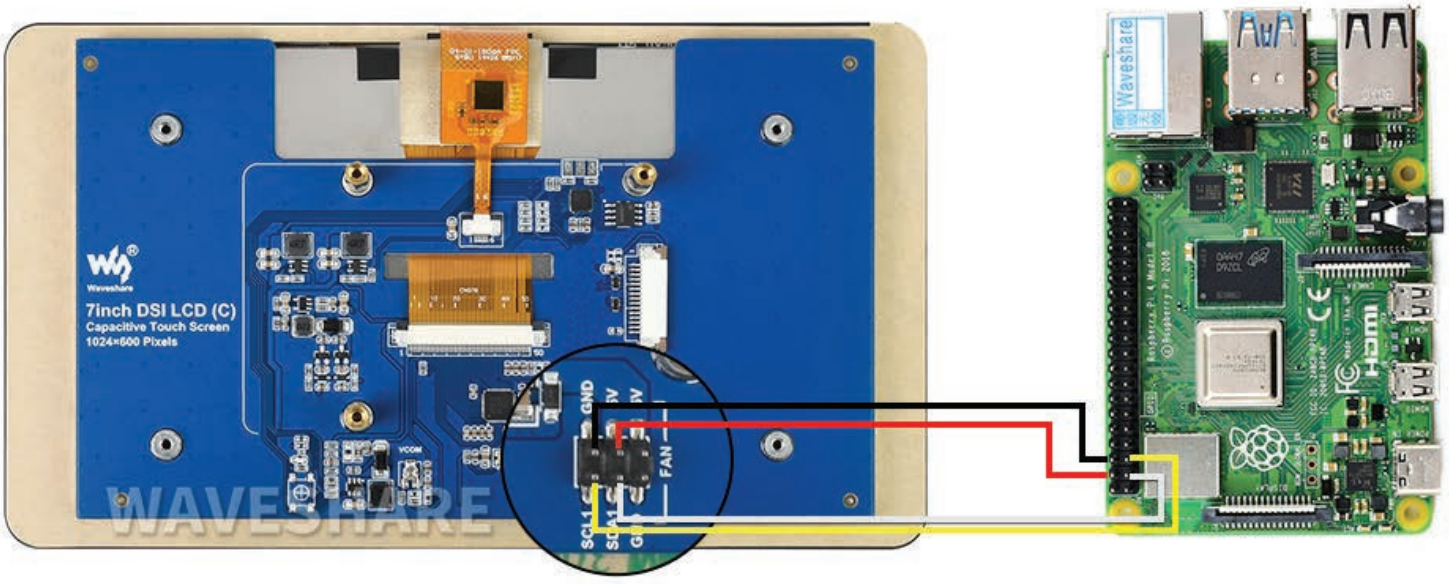


Step 6

Attach the Raspberry Pi to the housing with the gold standoffs that came with the display.
Use the short bundle of four jumper wires to attach the Raspberry Pi GPIO to the display as shown by the diagram below. Attach the white display cable to the Raspberry Pi DSI connector as shown below.
Connect the fan to the display using the remaining pins on the display using the supplied jumper extension wires. Please make sure to connect the red on the fan to the 5V and the black on the fan to the GND. The color of the supplied jumper extensions will vary.



If using Raspberry Pi 5 the gold ribbon cable will go the DSI1 connector on the board as shown above.

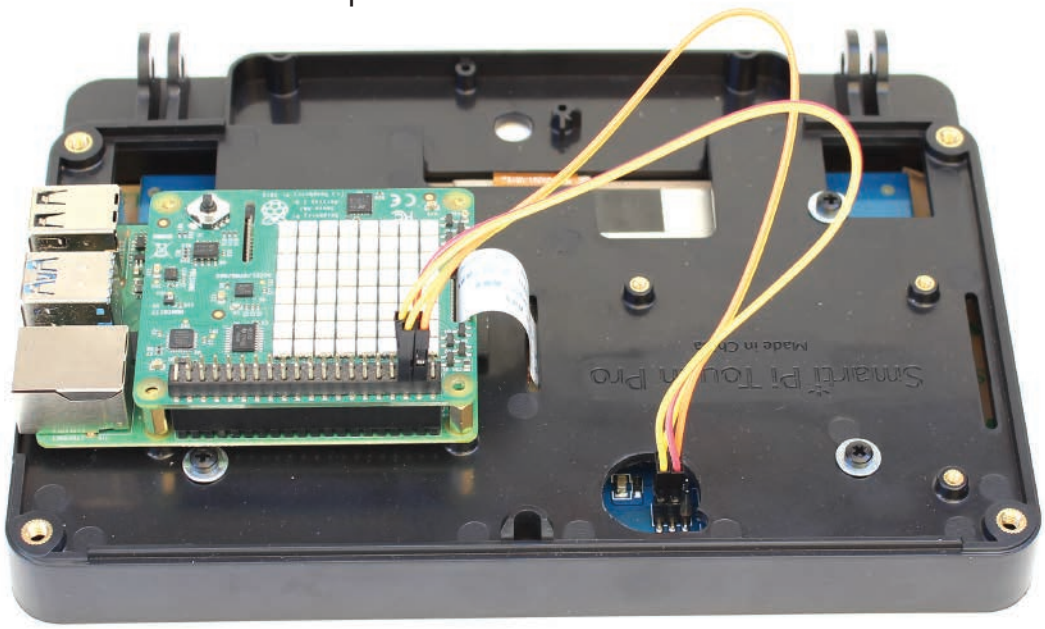


Drivers and setup for the display are at the link below. These are required for it to function.
https://www.waveshare.com/wiki/7inch_DSI_LCD_(C)

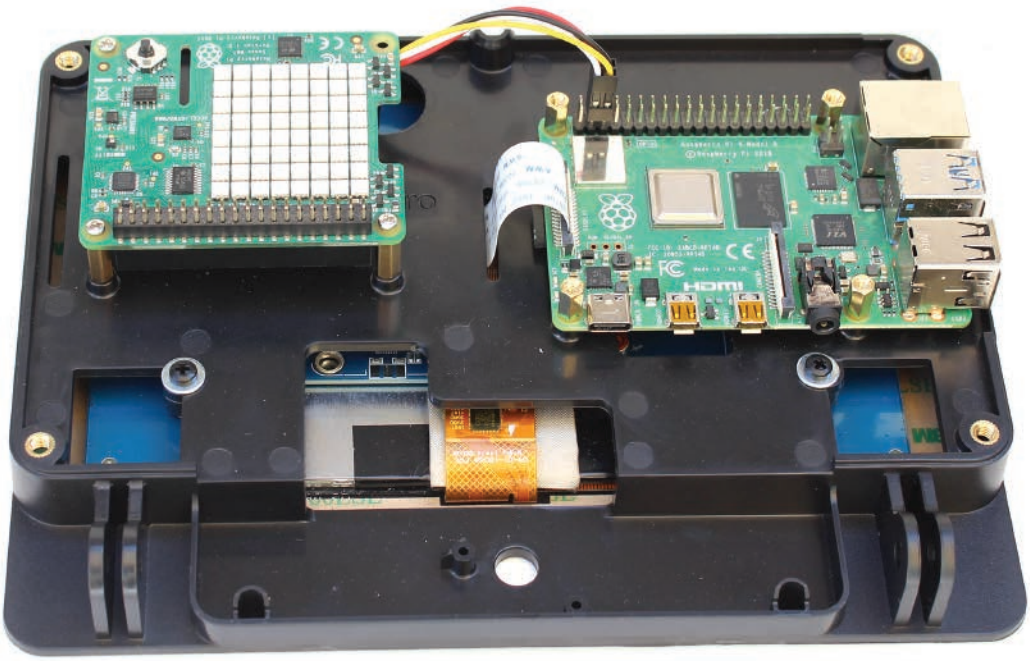
Step 7

If you want to use HAT boards you have two options.

Option 1 - Stack the HAT directly on top of the Pi and purchase longer female to female jumper wires (not included) to attach the display to the GPIO pins on the HAT. You will need to make sure the HAT is not using the same GPIO pins as the display. Most HATS allow you pass through the pins so they are accessible on the top.



Option 2 - Attach the HAT to the other mounting area with three threaded standoff risers (not included) to avoid the GPIO jumper cables on the display. You would then need to use jumper cables to attach the HAT to the Pi GPIO pins it requires to function.



Step 8

If you choose to use the camera hole, the Official Raspberry Pi camera can be assemble into the the camera hole with two of the small black screws. If you are not using the camera, proceed to Step 9.

To rotate the camera image 180 degrees

In a command line enter

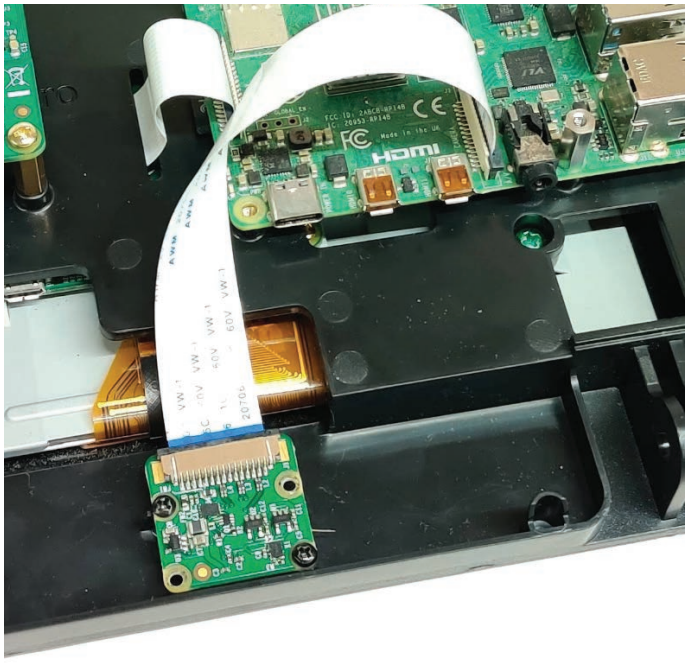
sudo nano /etc/rc.local

Then go down and enter the following code above exit 0

v4l2-ctl --set-ctrl=rotate=180

Then enter CTRL+O to write out the file , then press Enter to confirm and then CTRL-X to exit.

Once rebooted that should have the camera rotated the correct way for most applications.



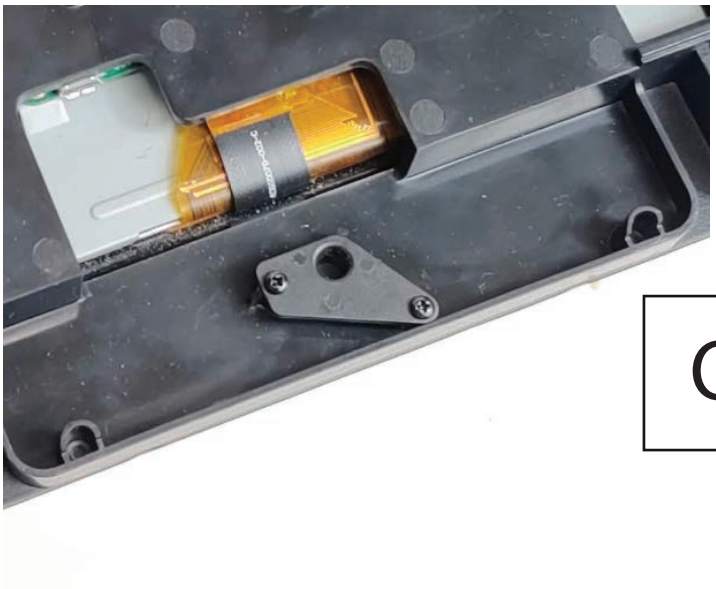
Do not overtighten the screws!

Step 9

If you chose to not use the camera, you can temporarily plug the hole with the small plastic cover part with two of the small black screws.

Alternatively, you can permanently cover the camera hole with the adhesive front panel. Do not have the plastic camera cover part installed when you apply the adhesive panel. The adhesive panel is not removable.

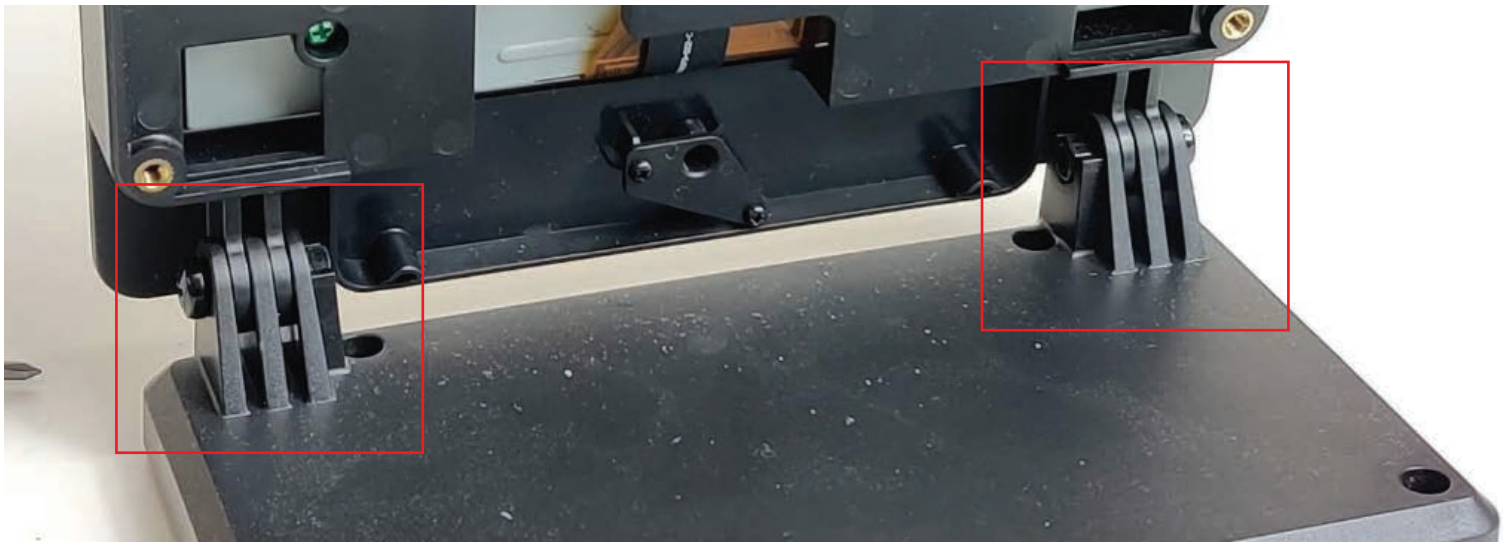
Custom artwork and logos can be added to this adhesive panel for bulk quantity purchases. Contact us for more info.



Or

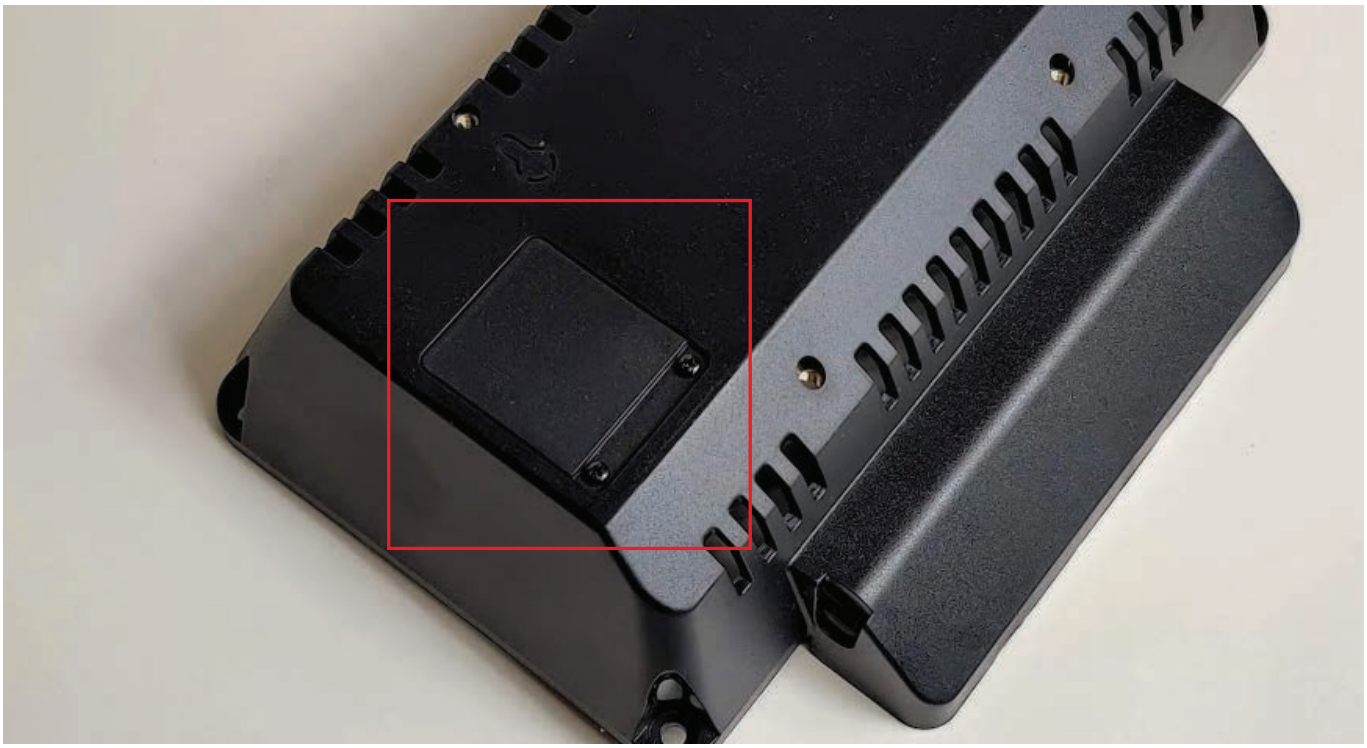
Step 10

Assemble the display housing to the stand with the large black screws and nuts.
DO NOT OVERTIGHTEN. Loosely attach the screws at this point.



Step 11

If you choose to not use the fan, the small door can be assembled into the hole in the back cover and attach with two of the small black screws.

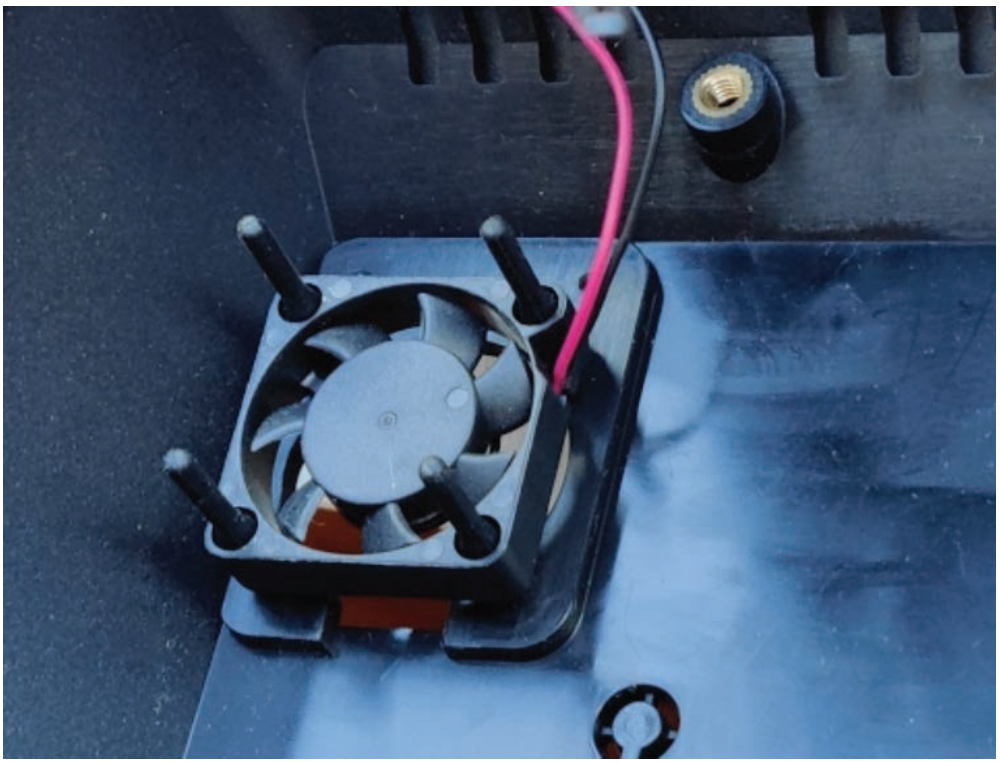


Step 12

If you choose to use the fan , attach the small rubber vibration mounts to the holes in the back cover as shown below. Push the small end of the mount through the back cover from the outside. Then pull it through the cover as shown.

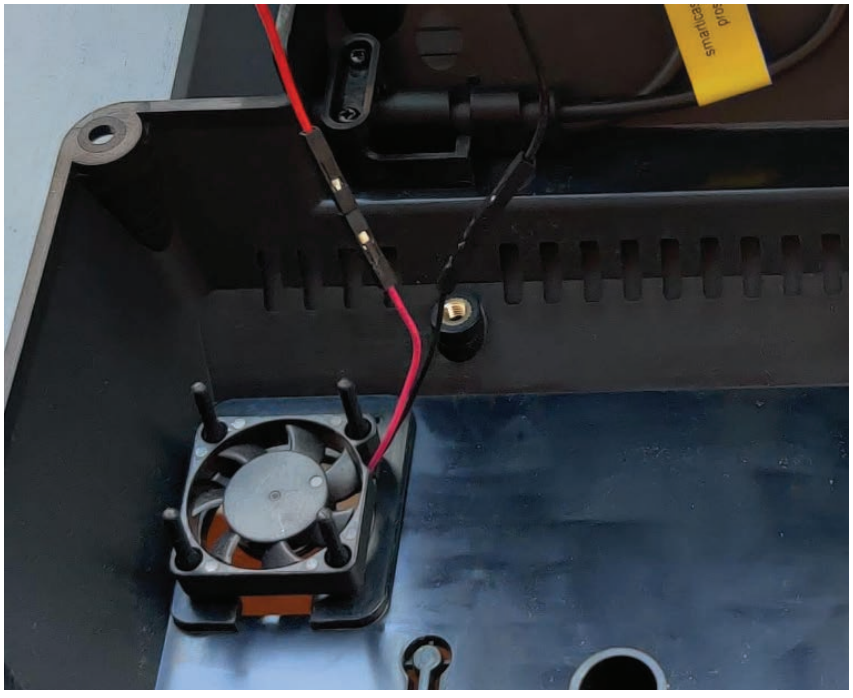
Step 13

Then pull the rubbers mounts through the fan holes and pull the thin end of the mount until the fan is mounted on the rubber mount as shown below. The fan should only be mounted in the way as shown below.



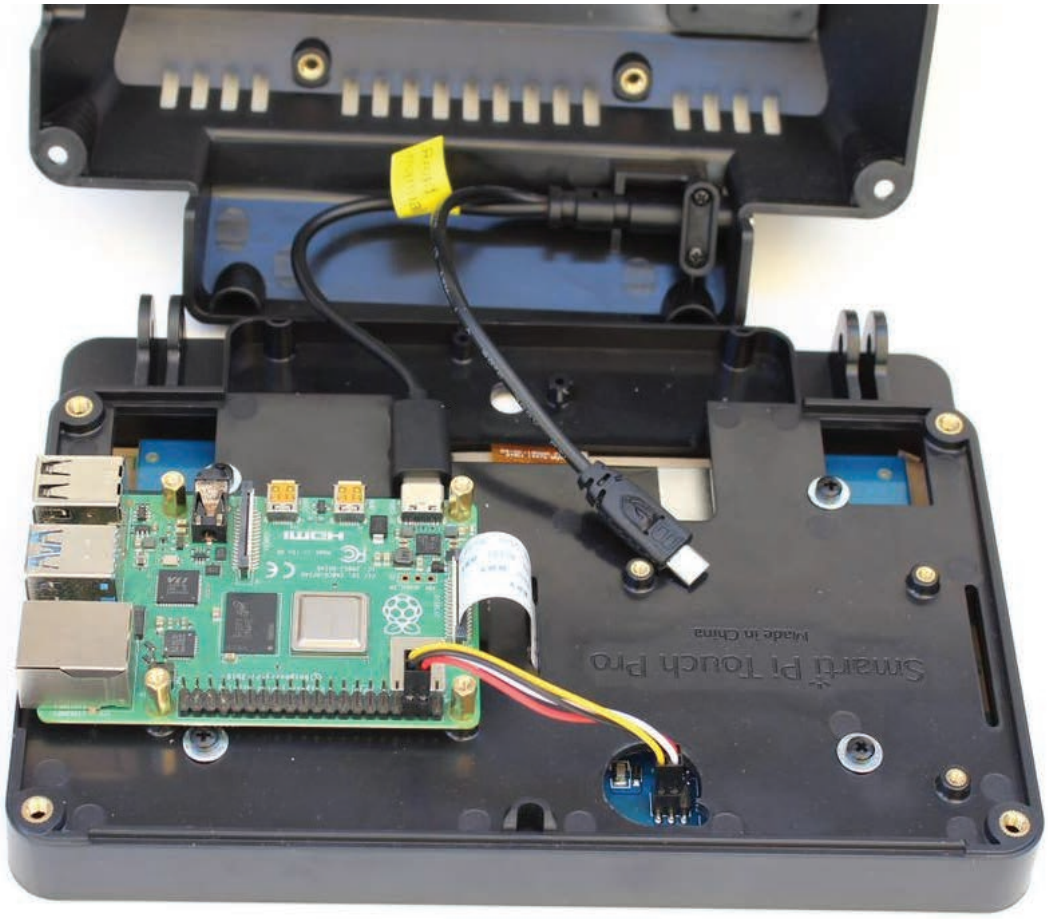
Step 14

Attach the supplied jumper cable extenders to the red and black on the fan. The color of the jumpers may vary. Make sure the red on the fan is connected to the 5v on the display and the black is connected to the GND on the display.



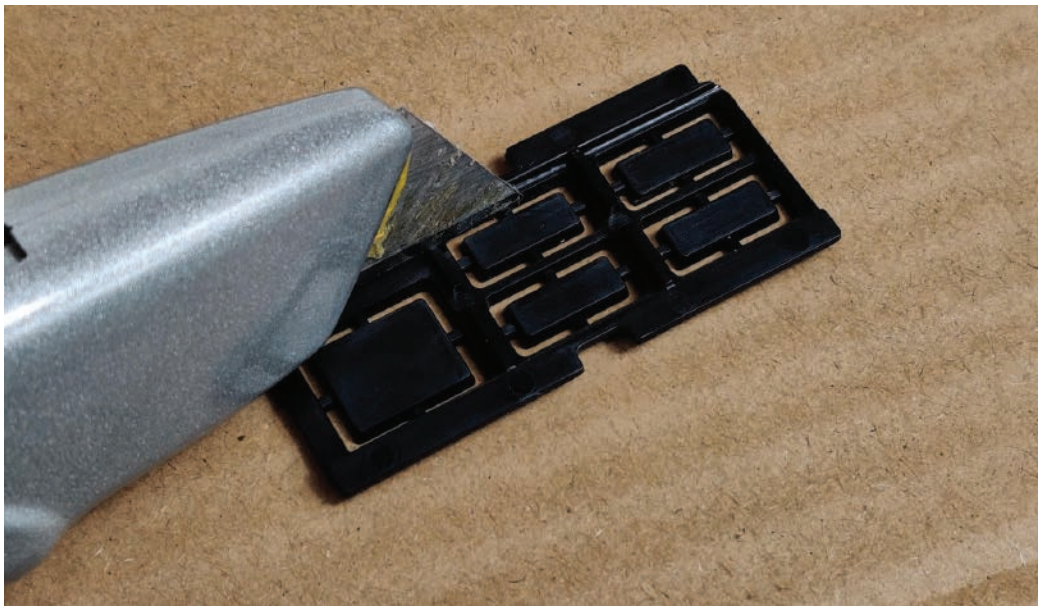
Step 15

Attach the USB-C end of the splitter to the Raspberry Pi. The micro USB end is not used. The display is powered by the jumper wires.



Step 16

If using the port blocking part, from the back side cut out the desired ports with a utility knife.



Step 17

Assemble the back cover to the display housing with the four black screws.
The port blocking part should have tabs that fit inside the housing and cover.

Step 18

Adjust the angle of the display to suit you needs. Then tighten the pivot screws.
DO NOT OVERTIGHTEN. Tighten the screws just enough to hold the display in place.

Green screws left over?

You will have 4 green screws left when you are done. This is not a mistake.
These are prepackaged with the hardware and are for the version of the product that is compatible with the Raspberry Pi official display. Please discard them.

VESA mounts

75mm VESA mounts (circled in red) can be used to mount the display housing instead of using the stand. The threaded holes are size m4

Two eyelets can be cut out with a utility knife (circled in blue) to mount to a surface. The mounting points are 75mm apart.

Step 5

For Pi 4

Route the ribbon cable through the slot as shown below.

Secure the case to the display with the four black screws and washers circled in red.

For Pi 5

Connect the gold ribbon cable to the display connector as shown below.

Secure the case to the display with the four black screws and washers circled in red.