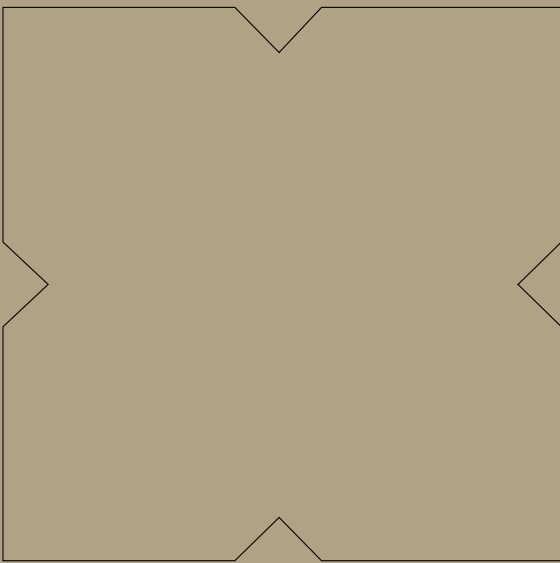


xiphonics

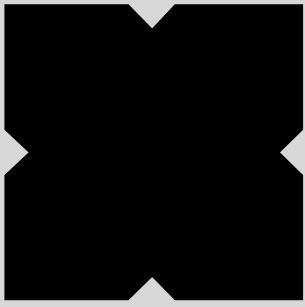
picoTracker 2.0

build guide



picoTracker

v1.0

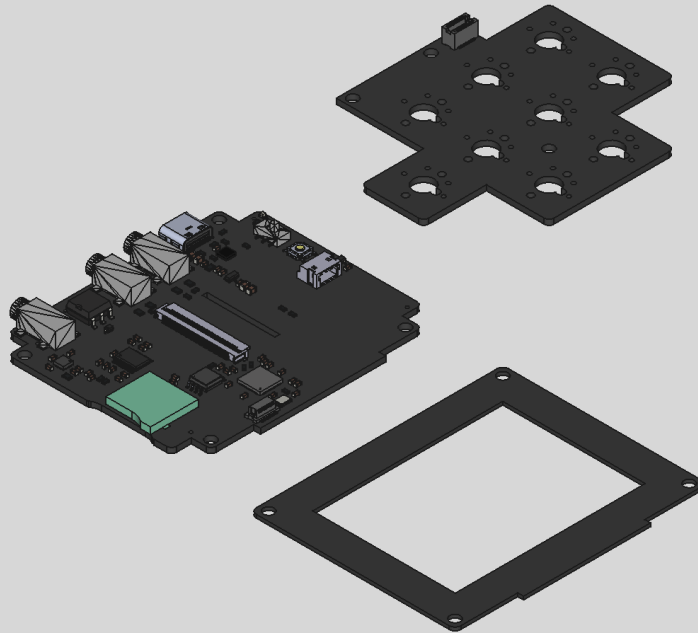


Thank you for purchasing the picoTracker kit

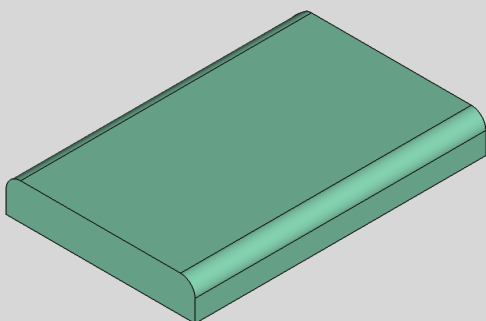
In this guide you will find information about what other parts are required to complete your picoTracker build as well as step by step instructions on how to assemble it.

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If you are reading this guide, you probably either purchased a set of picoTracker PCBs or assembled your own. We'll go over all the components that will be needed to assemble the picoTracker. In the appendix you'll find more information about where to source some of these components.

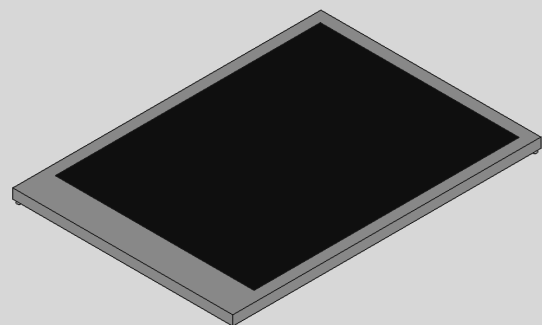


✦ **1 x LIP1708 battery**



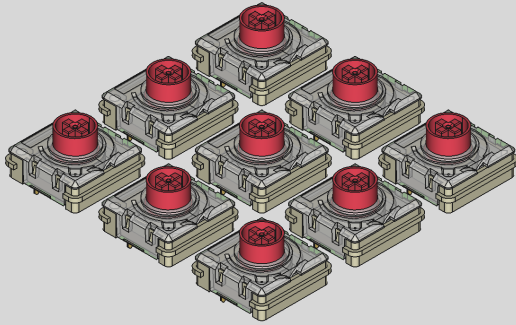
✦ **1 x 2.8in HP28008-D LCD**

(40Pin 0.5pitch SPI 320x240
ST7789)



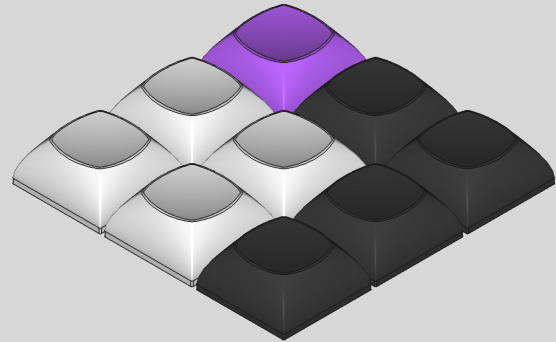
9 x switches

(either Cherry low profile or Kailh choc)

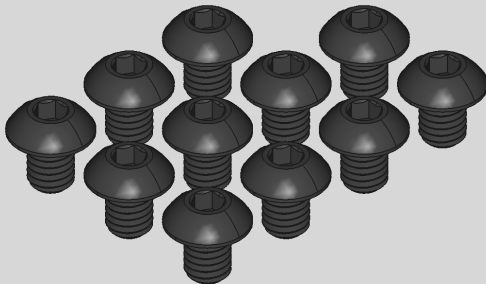


9 x Keycaps

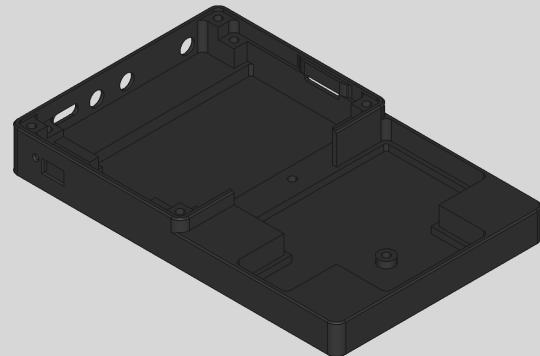
DSA (Cherry or Kailh choc v2) or Kailh choc v1 keycaps



11 x M3x4mm screws

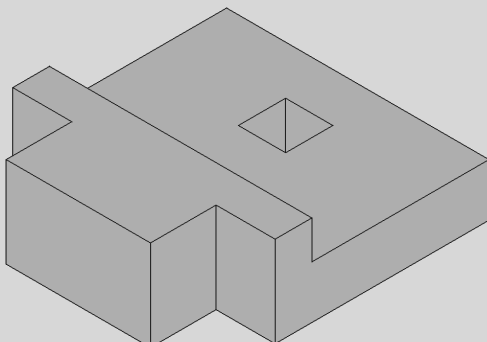


1 x 3D printed case

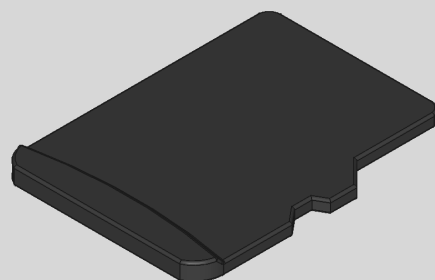


1 x 3D printed power switch

(transparent)



1 x micro SD Card



3D printed parts

The STL and step files for the picoTracker case and power switch slider can be found at:

<https://github.com/xiphonics/picoTracker-case/releases/tag/v2>

STEP 3B. Test fit of main PCB

The 3d printed case and switch part are designed with tight tolerances so it is highly recommended that you print them at the highest quality settings possible on your printer.

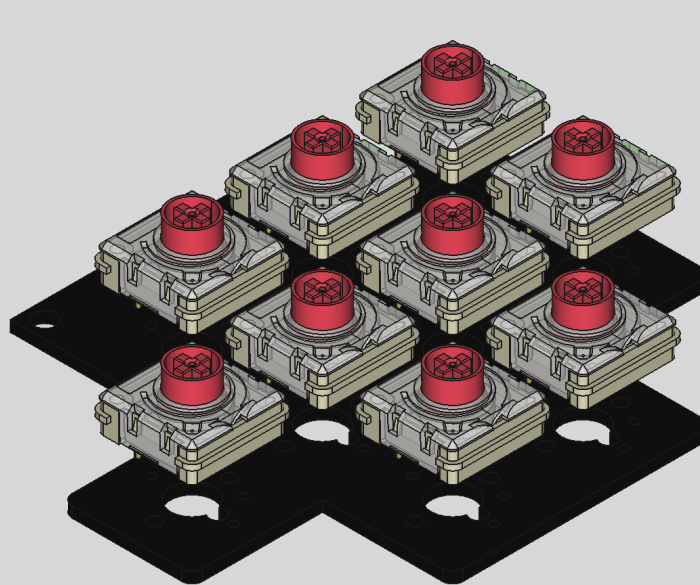
If you have a high speed core X_Y style printer (eg. the Bambu range) it is highly recommended that you also significantly lower the standard profile printing speeds to help achieve a print with the required

tolerances to match the PCBs.



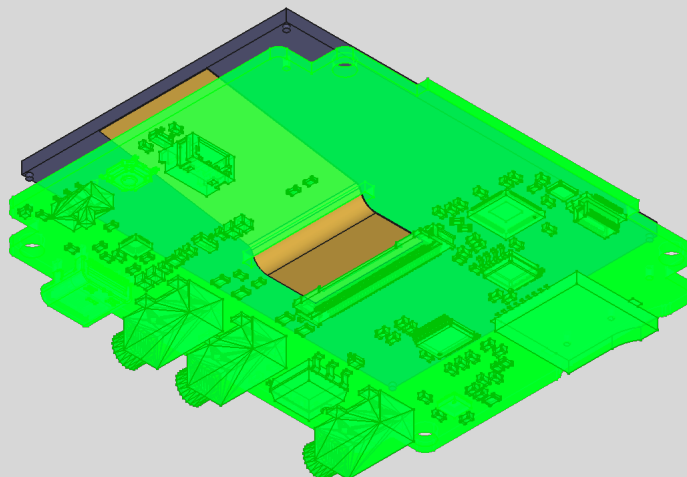
STEP 1. Soldering the key switches

The only soldering required during the picoTracker assembly is to solder on the switches to the keypad PCB. If you choose to use low profile Cherry switches, you will notice that the notch on hole cutout on the PCB matches the required orientation of the switch. For Kailh switches, you will need to match the orientation based on the pins of the switches, they will match the holes for them on the PCB in one orientation only.

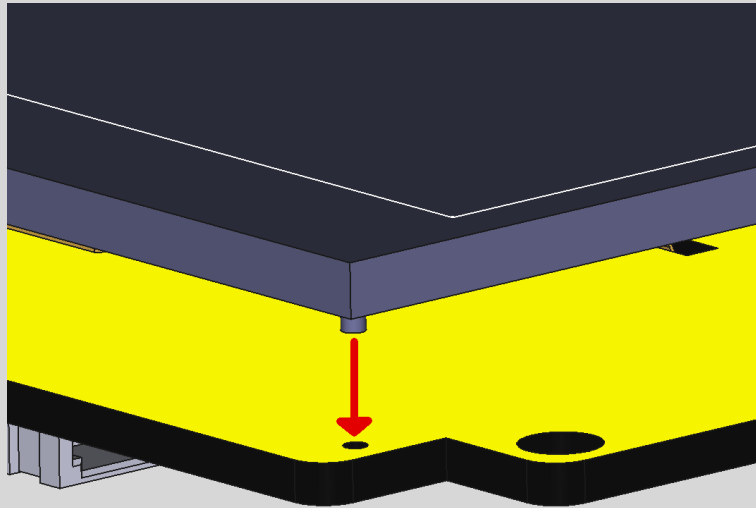


STEP 2 Mount the LCD on the Main PCB

Feed the flex cable of the LCD through the matching hole in the PCB and attach it to the connector on the component side of the PCB. The connector has 2 small black clips that you can gently move forwards away from the connector to open the connector to allow the flex cable in and then move them back to close the connector to clasp the flex cable.



Align the LCD with the white line markings on the non component side of the PCB, you should also find that there are small plastic “stubs” in each corner of the under side of the LCD that match with the small holes in the PCB. If your LCD came with double sided tape already placed on the underside of it, use it to stick down the LCD to the PCB once you are happy that the flex cable is connected securely. If it didn't, we recommend you use some thin double sided tape yourself to secure the LCD to the PCB.



STEP 3. Assemble the PCBs within the case

You are now ready to assemble the PCBs inside the case. This is the trickiest part of the whole assembly process as you will need to align the 3d printed power switch part with the small sliding power switch on the main PCB as well as align the main PCB with the USB and TRS holes on the top side of the case as well as aligning the connector on the main PCB with the matching connector on the keypad PCB once the keypad PCB is sitting in the case.

STEP 3A. Test fit of power switch

Initially start the process by checking the fit of the 3D printed power switch part onto the switch on the PCB. The switch should fit onto the 3d printed part snugly BUT not require force to go on, be careful as you can snap the switch's plastic head off if you apply too much force when fitting the 3d printed power switch onto it! If your 3d printed switch part is printed with too small a hole for the power switch on the PCB, you can use one of the alternative STL files with bigger holes.

STEP 3B. Test fit of main PCB

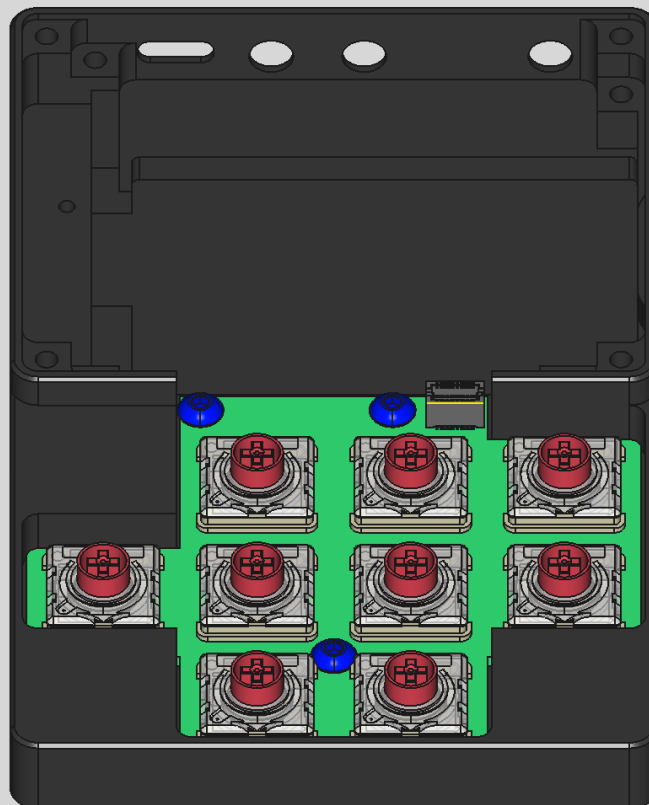
Next test the fit of the main PCB into the case. It should snugly but without needing to apply a lot of force to fit into the case, the USB and TRS sockets matching up to the respective holes in the top of the case.

3C. Attach the battery

Now attach the battery to the main PCB. Note the JST connector only connects in one orientation.

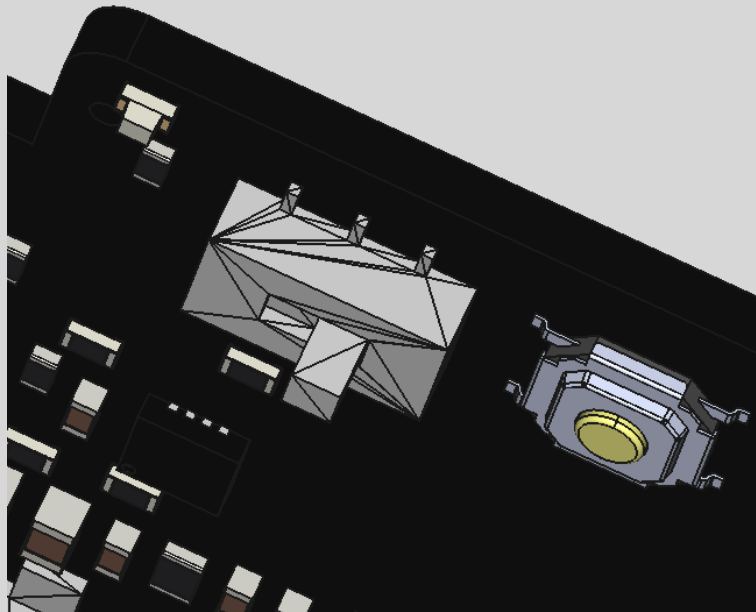
3D. Fit the keypad PCB

Fit the keypad PCB into the case and install the 3 screws to secure it into the case.

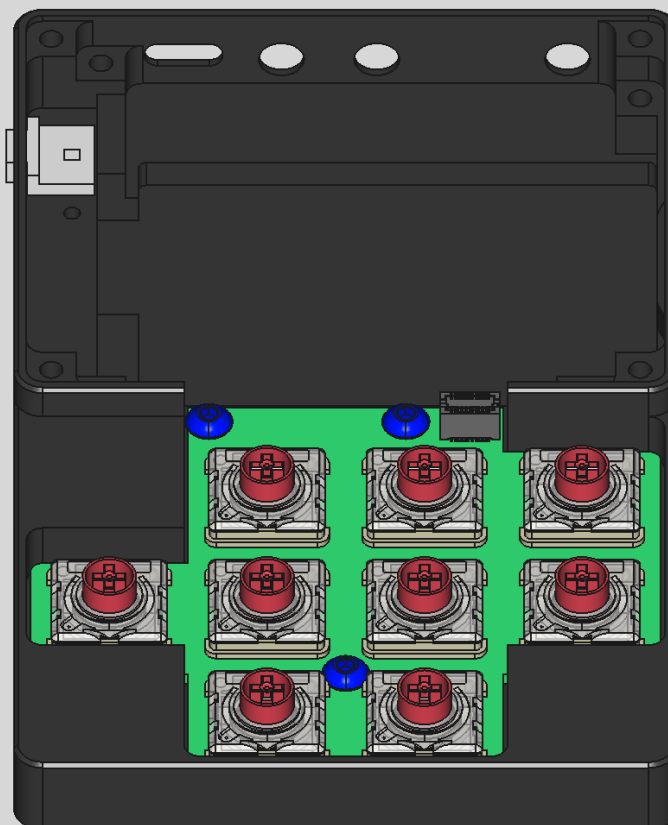


3E. Fit Main PCB

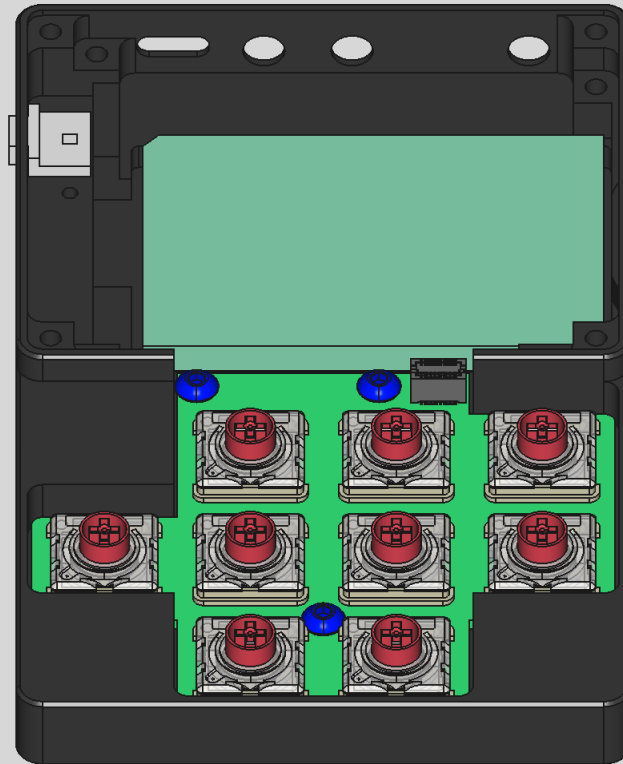
Make sure the switch on the main PCB is in the OFF position.



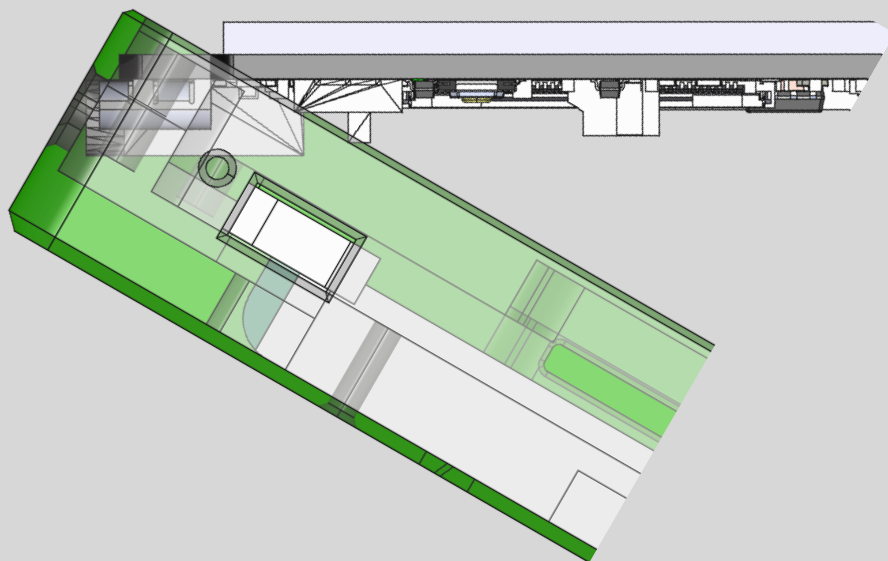
Place the 3d printed switch into the slot inside the case left side slot. The switch should keep in place between the outer wall and the inside support for the switch.



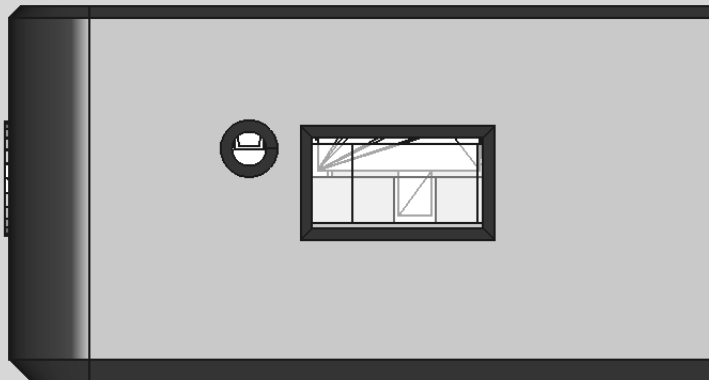
Place the battery in place (battery should be previously been connected to the main PCB)



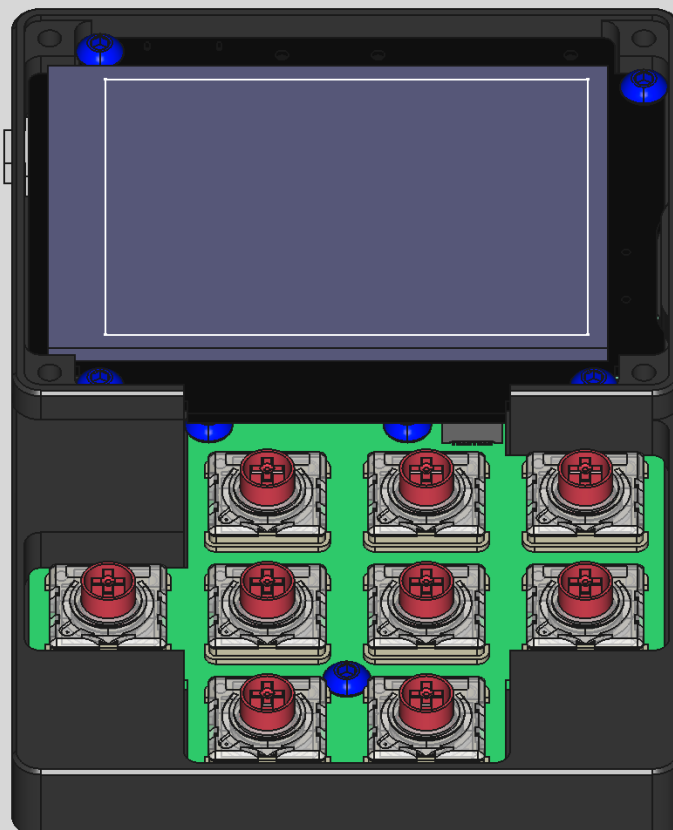
Holding the case at an angle so that the power 3D printed switch is placed in the “off” position like the PCB power switch, place the main PCB at an angle in order to fit it on the back openings



Rotate the main PCB in order to place it in its final position, ensuring that the power switch connects with its corresponding connector, this shouldn't require any force.

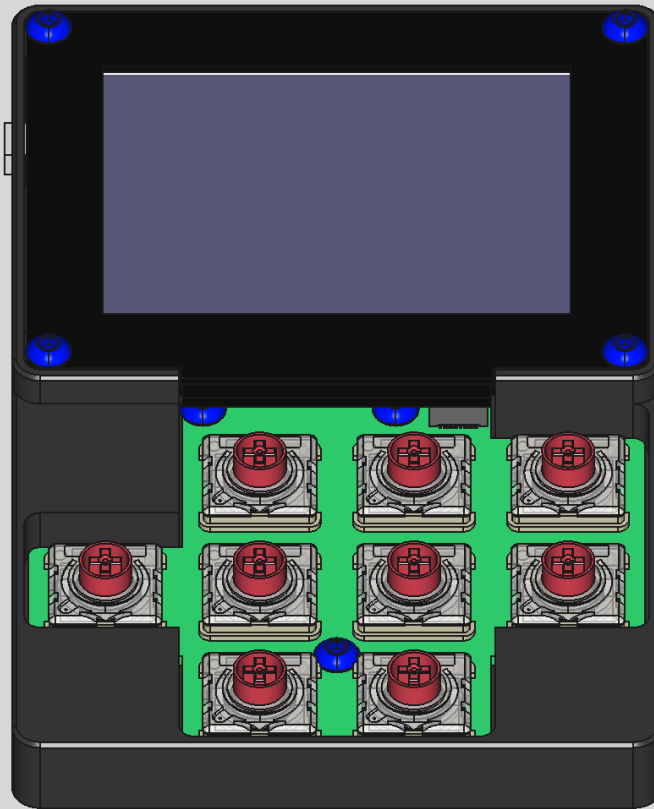


After fitting the main PCB into the case, install the screws into the four corners



Step 4. Install Bezel PCB and keycaps

Finally place the bezel PCB on top of the LCD and install the remaining 4 screws into the 4 corner holes to secure it to the case.



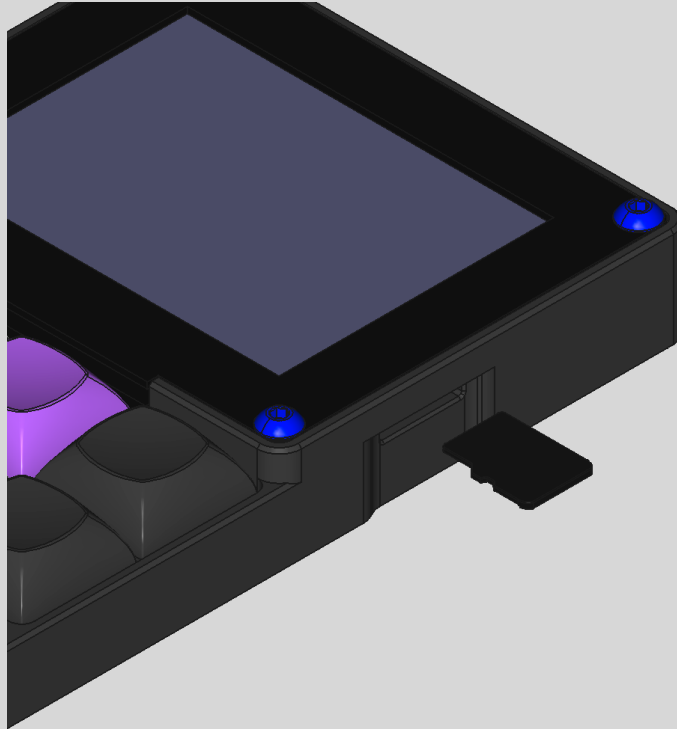
You can now install the keycaps onto the switches of the keypad PCB



Step 5. Install the Micro SDCard

Install the micro sdcard into the slot on the right hand side.

PLEASE NOTE: the orientation of the sdcard is “upside down”, i.e. insert it with the metal contacts on the sdcard facing towards you.



Congratulations! your picoTracker should now be ready for you to use.

Appendix - components

Display

Model: HP28008-D

Size: 2.8 in

Type: IPS

Controller: ST7789V

Connector: 40 pin 0.5pitch

Sources:

<https://www.aliexpress.us/item/3256804442655004.html> (Color: IPS Screen No Touch)

