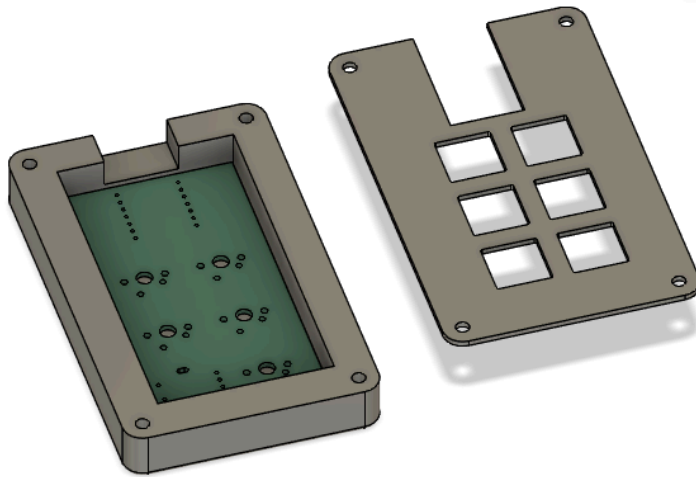


Sahasra's Audio Hackpad



Inspiration

One of the biggest problems I always face when audio editing is having the shortcuts and keys far apart.

Not only does this slow my process down, but when I'm in a rush, I often click the wrong buttons, and my whole project gets destroyed.

This hackpad is designed to solve that problem, as I specifically designed it for audio editing, allowing me to quickly cut audio and adjust noise levels (all referencing Adobe Audition).

Moreover, I can do all this without risking clicking the wrong button or moving my hand away from my mouse, solving my problem with time constraints and incorrect commands.

Challenges

This was my very first time doing anything like this project. That means first-time using PCBs, electrical schematics, GitHub, the whole gist.

It took a lot of googling and asking others for help, but I finally made it after a couple of weeks. I'm really proud of this finished product and super happy that it'll solve a lot of my audio editing problems now.

Specifications

BOM:

- 5x Cherry MX Switches
- EC11 Rotary Encoder
- 1x XIAO RP2040
- 5x Blank DSA Keycaps
- 4x M3x16 Bolt
- 4x M3 Heatset

Others:

- KMK Firmware
- Top Case.stl
- Bottom Case.stl

Schematic	Case	PCB
<p>The schematic diagram illustrates the electrical connections for the Sahasra's Audio Hackped. It features a central microcontroller, the ESP2040-D09P (labeled U2), which is interfaced with a RotaryEncoder-Switch (SW5) and seven push buttons (SW1 through SW7). The microcontroller's pins are configured as follows: GPIO28/ADC1/A0 to VDD, GPIO27/ADC1/A1 to GND, GPIO26/ADC1/A2 to VCC, GPIO29/ADC1/A3 to GPIO3/MISO, GPIO5/SDA to GPIO4/MOSI, GPIO17/SCL to GPIO2/SS, and GPIO3/7K to GPIO2/RES. The push buttons are connected to the microcontroller's GPIO pins: SW1 to GPIO4, SW2 to GPIO5, SW3 to GPIO17, SW4 to GPIO2, SW5 to GPIO3, SW6 to GPIO28, and SW7 to GPIO29. The rotary encoder is connected to GPIO27, GPIO26, and GPIO29.</p>	<p>The image displays two 3D perspective views of the physical case for the Sahasra's Audio Hackped. The case is a dark, rectangular enclosure with a recessed area for the microcontroller and a separate section for the push buttons and rotary encoder. The top view shows the layout of the buttons and the rotary encoder, while the side view shows the depth of the case.</p>	<p>The PCB layout shows the physical arrangement of the components on a dark blue board. The microcontroller (U2) is centrally located, with the rotary encoder (SW5) and seven push buttons (SW1-SW7) arranged around it. The layout includes the same wiring as the schematic, with components labeled with their respective pin numbers and names. The board is labeled 'Sahasra's Audio Hackped' and 'v1.0'.</p>