

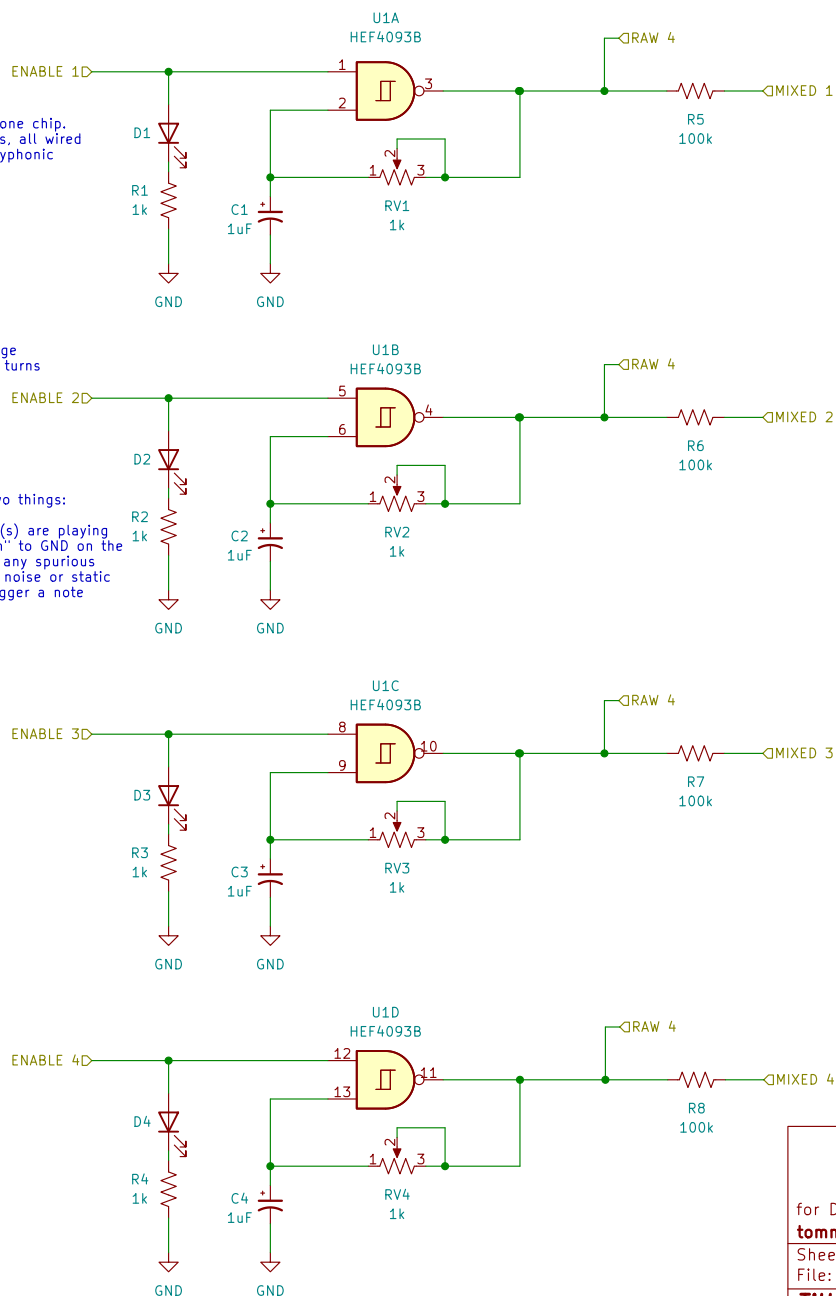
POLY4093 board

These 4 oscillators are all on one chip. Imagine there are 3 4093 chips, all wired identically -- 12 notes of polyphonic square waves!

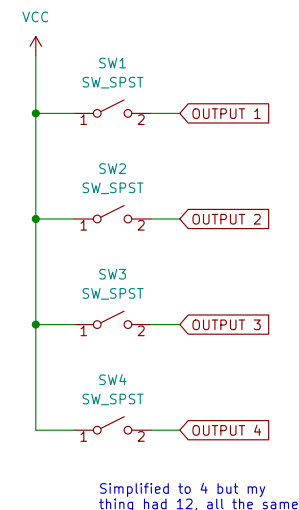
Any high voltage on enable pin turns on oscillator

LED and resistor do two things:

- 1) Tells us which note(s) are playing
- 2) Acts as a "pulldown" to GND on the enable pin. W/o it, any spurious voltage from power noise or static can accidentally trigger a note



"PIANO KEY" switch board

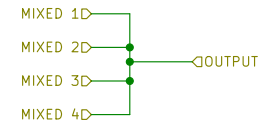


Simplified to 4 but my thing had 12, all the same

Note the matching 1-4 output/enable on the two boards. Each of these is a pin on a header. My demo had 12 oscillators but their circuits are identical to these 4

Keeping the two circuits separate and connecting them w/ headers and ribbon cables lets me swap them out independently

Sum of all "mixed" outputs goes to amp or 386 circuit



OMITTED FOR BREVITY: voltage regulator board

To try to cut down on frequency changes caused by a dwindling battery, I had a 3rd board with a chip called a 7805 voltage regulator. Its job is to take the battery's 9v and cut it down to a reliable 5v -- well within the 4093's requirements

Can be ignored if you don't need accurate tuning

for DIY Synths Autumn 22 Thursday
tommy marshall

Sheet: /
File: poly4093.kicad_sch

Title: simplified poly4093 demo

Size: A Date: 2022-10-28
KiCad E.D.A. kicad (6.0.1-0)

Rev:
Id: 1/1