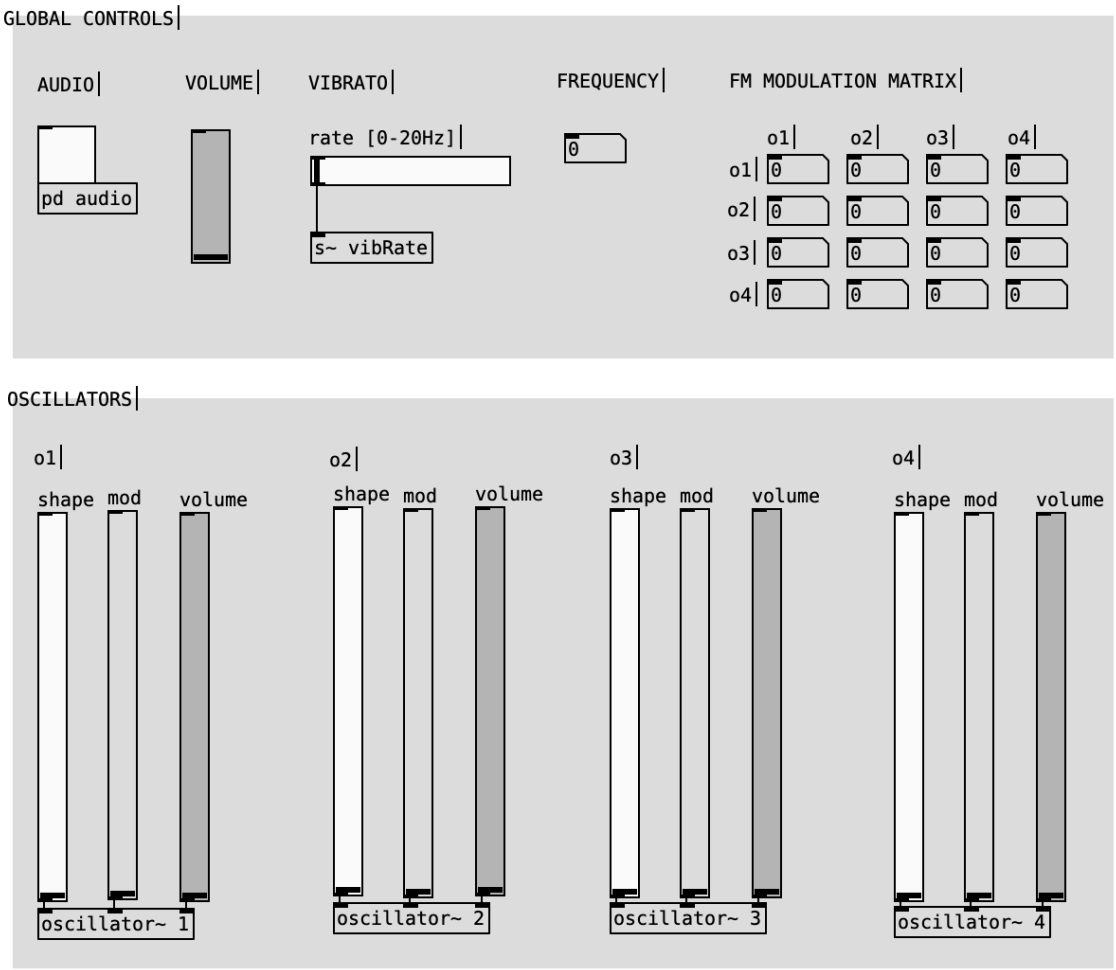
4 oscillator FM matrix synthesizer



It is hybrid FM, additive synthesis system. The range of possible timbres is very wide.

Basics of operation

Synthesizer voice is an addition of 4 linked oscillators. There is one base frequency set in **GLOBAL CONTROLS** section (first oscillator – o1). Remaining oscillators' (o2, o3, o4) 3 first integer multiples of base frequency. Each oscillator has 3 sliders – *shape*, *mod* and *volume*. *Volume* sets the amplitude of an oscillator, *mod* sets the depth of global vibrato modulation, *shape* morphs between pure sine wave and something closer to a square wave.
There is global setting of vibrato rate [0-20Hz], set in the **GLOBAL CONTROLS** section.

FM Modulation Matrix

This section allows you to set 16 integer values in between 0 and 100. Each row represents the modulation amount for consecutive oscillators. It means that in first row you set modulation of oscillator o1, in second of o2, and so on. Column represent the modulation source. It means that in the first column you set how much modulation comes from o1, in second column you set amount of modulation from o2, and so on. The amount of modulation for each source is 4 times basic frequency.

Tips

- Interesting things start to happen when you enter cross-modulation area. It means that two or more oscillators are modulating each other. Try to set o1 modulating o4 by raising the value in 4th column, 1st row. In the same time raise 1st column, 4th row value. You should now hear a bit unpredictable results.
- If you go wild with the modulation matrix, it will very likely result in noise. It's worth keeping in mind.