



ZÜRICH

A mono synthesizer with a
swiss-army-knife-like oscillator bank

OVERVIEW

Zürich was designed as a day-to-day tool for generating standard synth waveforms & sounds. It also includes a noise generator with both white and pink noise, as well as dedicated AR envelopes and filters for each. The filters were designed by Surreal Machines (please see the last page for credit info).

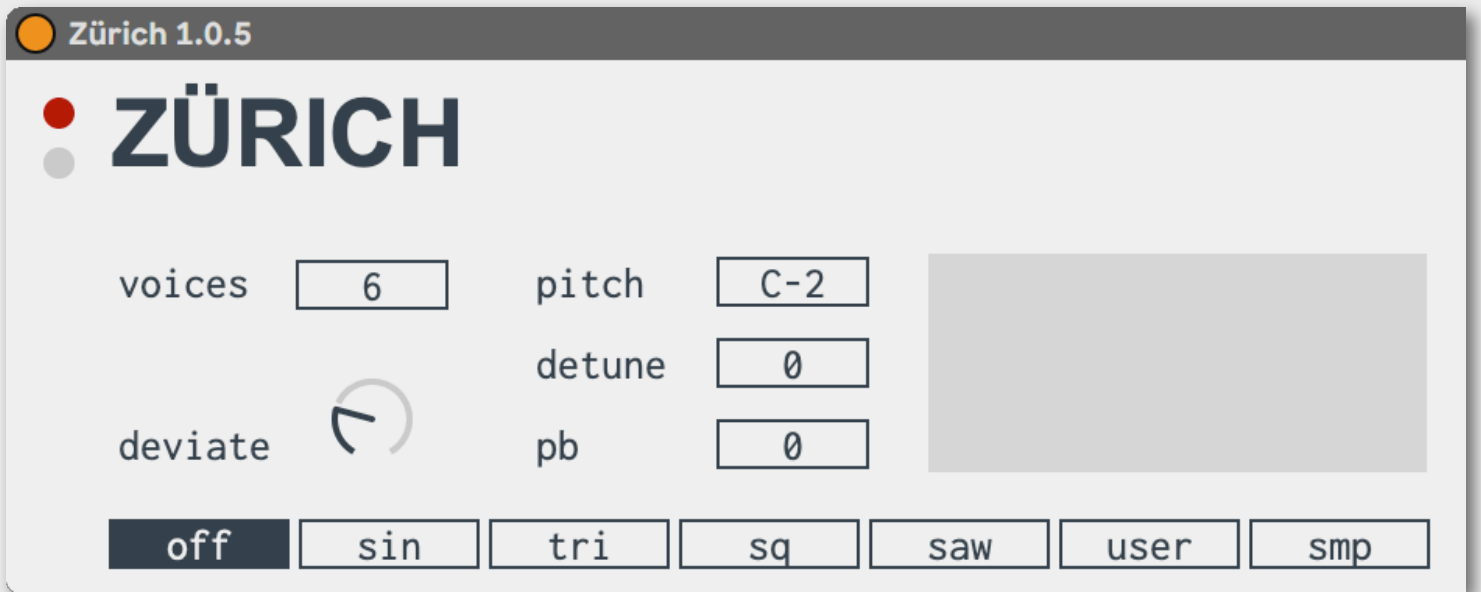


Zürich is divided into six sections, roughly:

1. The **Waves** section: a bank of standard oscillators & sound generators.
2. A dedicated **AR envelope** for the waves section.
3. A dedicated **filter** for the waves section.
4. **Noise generator** options & panning
5. A dedicated **AR envelope** for the noise generator
6. A dedicated **filter** for the noise generator.

Embedded also are panning controls and a second page for MIDI mapping and automation (more on this at the end of this user guide).

THE WAVES SECTION

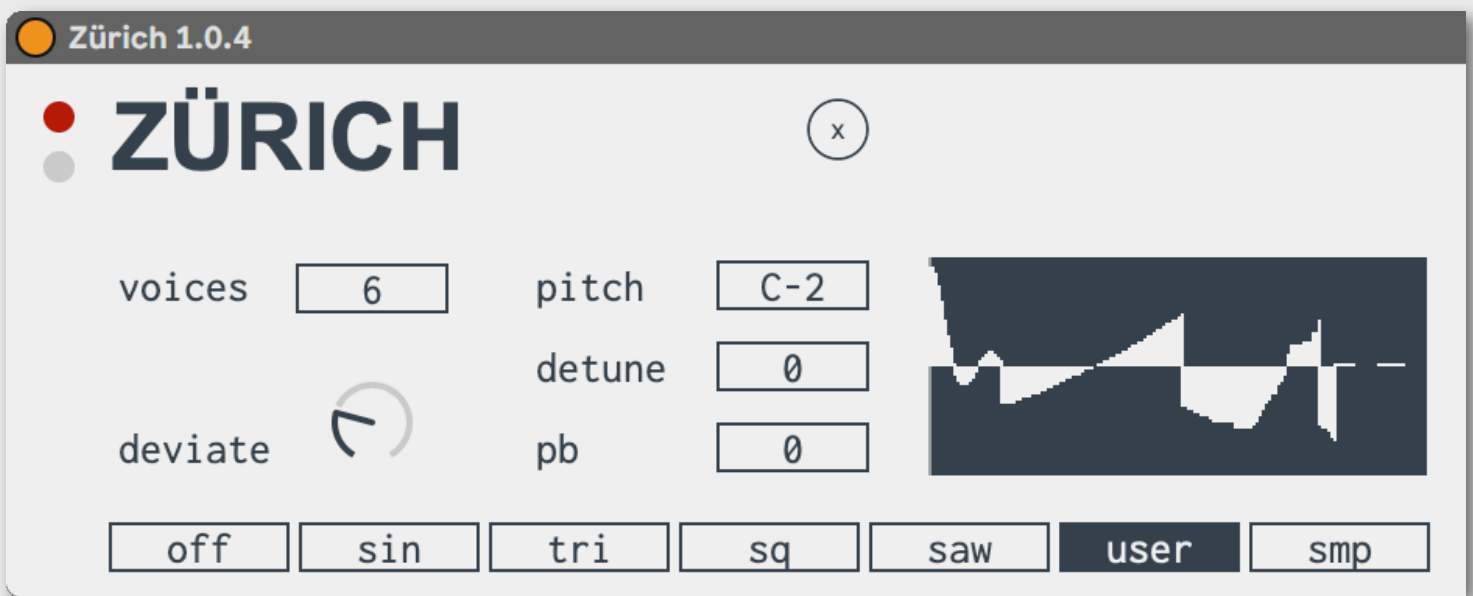


The oscillator section features the following global controls:

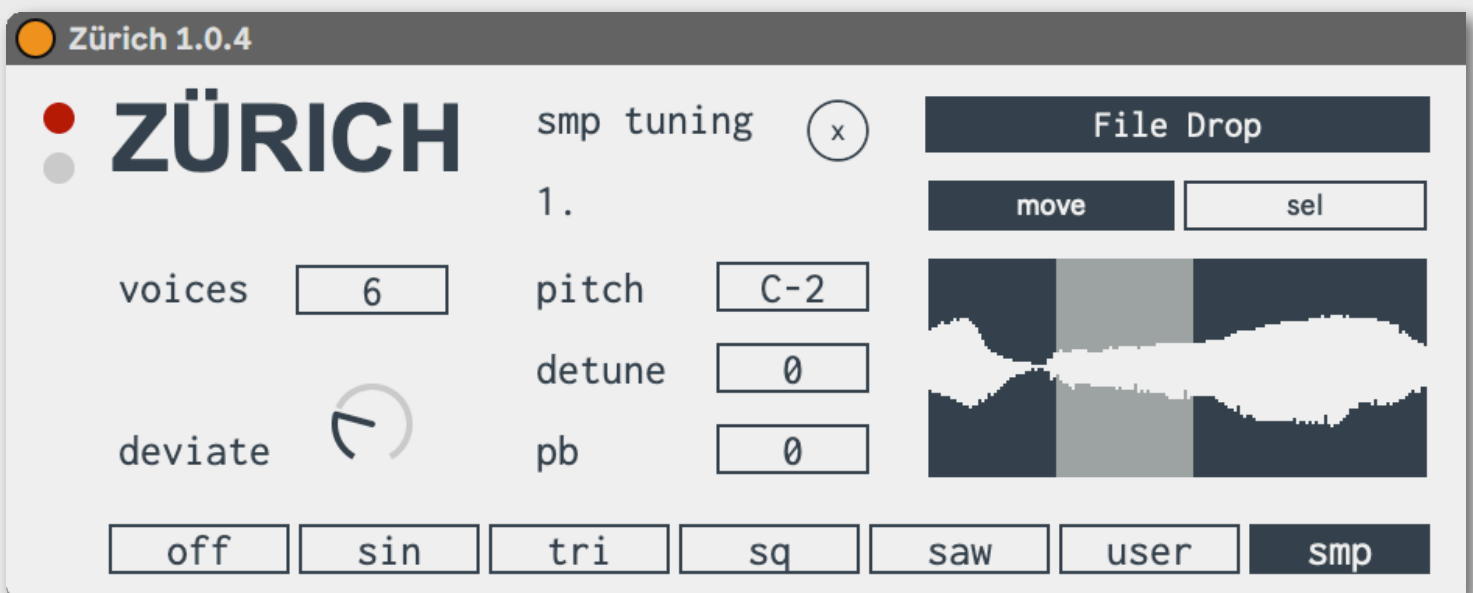
- **Voices:** even though Zürich is a monophonic synth, each of the basic oscillators can play up to 6 voices.
- The **Deviante** control let's you randomize the center frequency up to 12 Hz off its center.
- The **Pitch** control will let you monitor the incoming MIDI pitch.
- You can **detune** the basic pitch up or down by 100 cents.
- The **PB** control let's you adjust the amount of pitch bend, up to 48 semitones.

The first four oscillator types provide the standard sine, triangle, square, and sawtooth waveforms:





The **user** waveform let's you draw your own waveshapes. Simply click and drag with the mouse in the waveform monitor as you feel inspired. If you'd like to start over, just click on the **X** button above.



The **sampler** waveform let's you use an audio file as a sound source. You're free to play the whole sample or loop a portion of it.

- Drop your audio in the **File Drop** area.
- Choose **move** to zoom and navigate around your waveform (vertical dragging zooms in and out, horizontal dragging moves the waveform left or right).
- Choose **sel** to select an area of your waveform that you wish to loop.
- The X button in this case resets your loop selection and reverts to looping the entire sample.

THE AR ENVELOPES



The standard **attack** and **release** controls feature a time range from 0 - 2000 milliseconds, which can be multiplied up to 4 times (for a total of 8 seconds each).

Each stage can be **curved** up or down with the colored **dual-slider** above.

The **C** button clears the curves.

In addition, both envelope generators (for the **waves** and **noise** sections respectively) can be linked together by clicking on the **small dot** next to the time expander knob.

FILTERS & VOLUME CONTROLS



Each sound generator (waves & noise) passes through a **Sallen & Key filter** (designed by Surreal Machines, more info at the end of this user guide), with the following controls:

- **Filter Type:** choose between low pass, band pass and high pass.
- **Cutoff Frequency.**
- Resonance (**Q**).
- **Velocity** Modulation Amount.

Also, each sound generator has its own **volume** control.

BYPASS

Additionally, each section in Zürich can be turned on or off, which also engages or disengages the CPU accordingly, for that particular audio network.

NOISE TYPE & PANNING



The noise generator can provide either **white** or **pink** noise.

The pan control affects both sound generators simultaneously.

The **R** button randomizes the panner with each Note ON trigger.

MIDI MAPPING & AUTOMATION CONTROLS



There's a dedicated page in Zürich for organizing MIDI mapping and automation.

Incoming MIDI can be bypassed for convenience (in case you wanted, say to only work with Live's automation and didn't want to get confused messages coming in)

Note: pitch bend control will always come through, but if you set pitch bend control to come in via CC and MIDI Mapping is bypassed, then the oscillator will not be receiving those pitch changes.

The following controls can be directly assigned to MIDI CC data (*also, the more important parameters can also be mapped using Live's remote mapping):

Waves

- **Wave type***
- AR Envelope: **attack & release***
- Filter **cutoff frequency** and **Q***
- **Volume**

Sampler Waveform

- **Loop start**
- **Loop end**
- **Link** loop start & end positions.

Noise

- AR Envelope: **attack & release***
- Filter **cutoff frequency** and **Q***
- **Volume**

Global Controls

- **Pan**
 - **Pitch control type** (pitch bend vs. regular CC).
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CREDITS

The filters used in Zürich were designed by **Surreal Machines**:

<https://www.surrealmachines.com/>

Front page photo:

Pavillon Le Corbusier

https://en.wikipedia.org/wiki/Pavillon_Le_Corbusier

<https://pavillon-le-corbusier.ch/en/>

<https://eguide.pavillon-le-corbusier.ch/en/>

For more information about Zürich and other M4L devices, please visit my website:

<https://flaviogaete.info/zurich>

<https://flaviogaete.info/programming>

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