

Session 8

Percussive synthesis

VA309 Modular Sound Synthesis @ EKA
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Recap of previous sessions

- What is “FM” in modular synthesis? What types of FM (or pitch CV) inputs are there, and what is each best for?

Recap of previous sessions

- Why is audio-rate FM good for west coast style patching?
- Does using audio-rate FM on a sinewave VCO change the harmonics of the generated wave?

Recap of previous sessions

- What is “generative approach”?
- What’s the simplest way to get a generative patch going?
- Is it mandatory to use a S&H in a generative patch?
- Can you interfere with your generative patch while it’s playing?

Acoustic percussion

- Definition varies depending on your definition of a “percussive instrument” (drum kit? A kettle? Your hands?)
- For now, let’s agree that an acoustic percussive instrument is anything that can be hit to produce a musically useful sound
- There are many ways a percussive instrument can look and sound. What features do their sounds share?

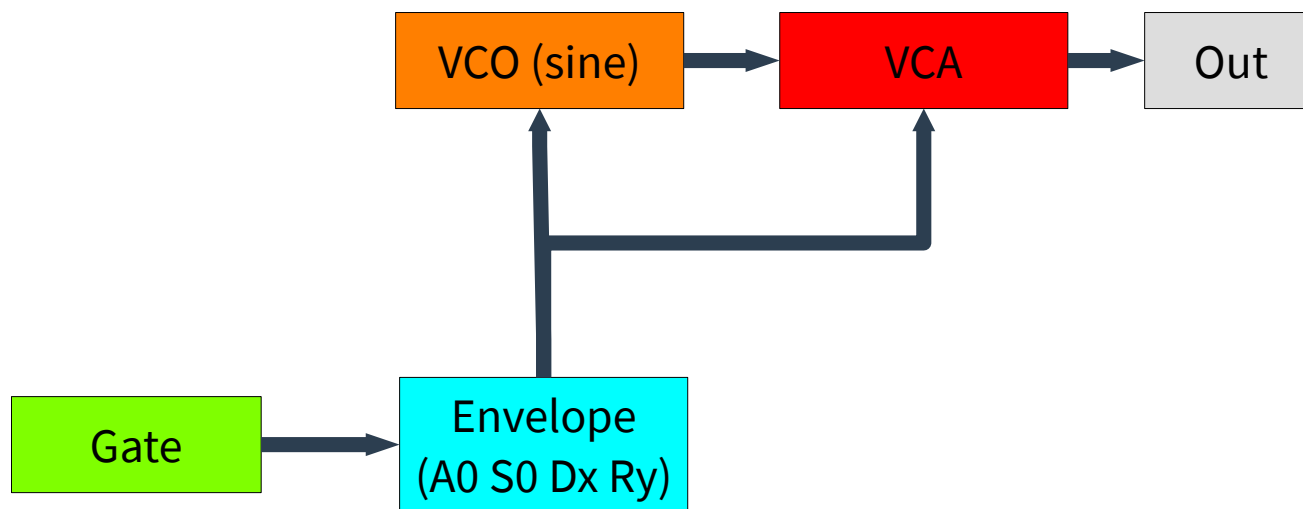
Acoustic → electronic

In general, the following is true about acoustic percussion :

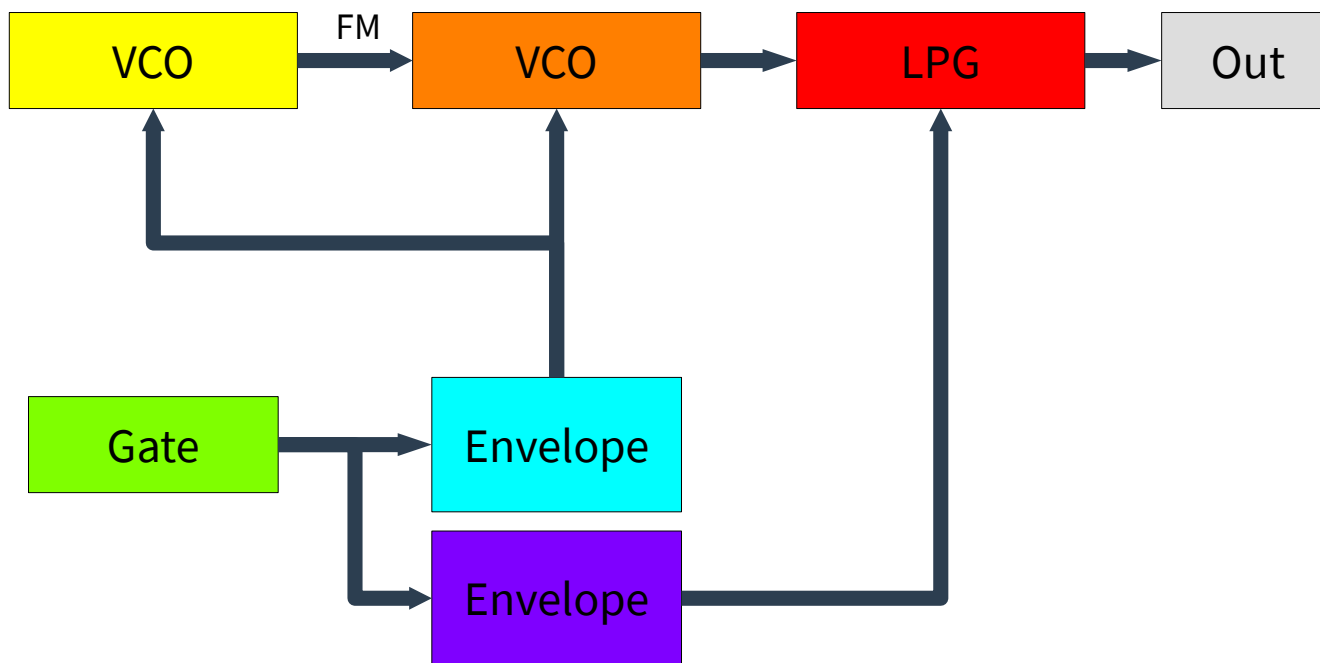
- When hit, they instantly sound loud, go quieter over time
- Pitch and/or timbre change over time after being hit
- The exciter (drumstick, brush, hand, ...) contributes to the sound's character and adds its own collision noise in the beginning

Any and all of these can, but not necessarily should, be emulated within modular context

Basic drum sound patch



Less basic drum sound patch



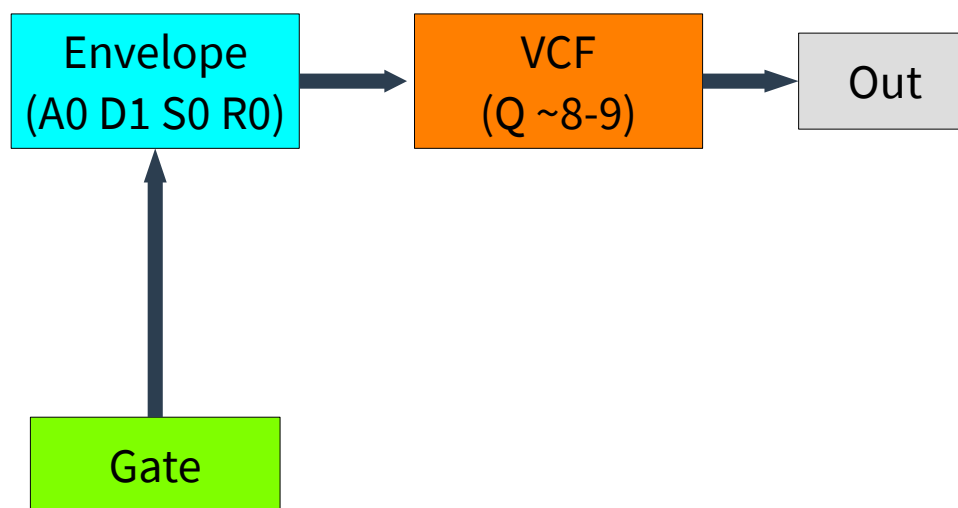
Subtypes of percussion

- By perceived tonality: tonal (pitched) VS not tonal (achromatic)
- By texture: VCO waveshape, noise, ...
- Classic groups (bassdrum, tom, hi-hat, snare, ...) still apply, but are encouraged to be experimented with and/or escaped

Filter pinging

- At high resonance, lots of VCFs oscillate
- When the resonance is just below oscillation point, any sharp change of the input audio will make the filter oscillate for a short bit
 - putting a short spike of voltage to a near-oscillating VCF's input makes it play a little drum sound!
- This is called “pinging a filter”, similarly to a glass
- A very organic-sounding drum technique, very similar to tapping a glass

Pinging a filter



Exercise

- Create two drum voices (filter ping allowed)
- Sequence them, e.g. using the clock divider
- Add CVs to drums' parameters, e.g. drum pitch, envelope length, filter cutoff frequency, etc!