Synthesis Recipe

TR-808 Snare

The Roland TR-808 snare drum sound can be emulated by mixing a sine wave oscillator and filtered white noise. The sine wave oscillator represents to resonance of the air within the drum and the filtered noise represents the springs of the snare.

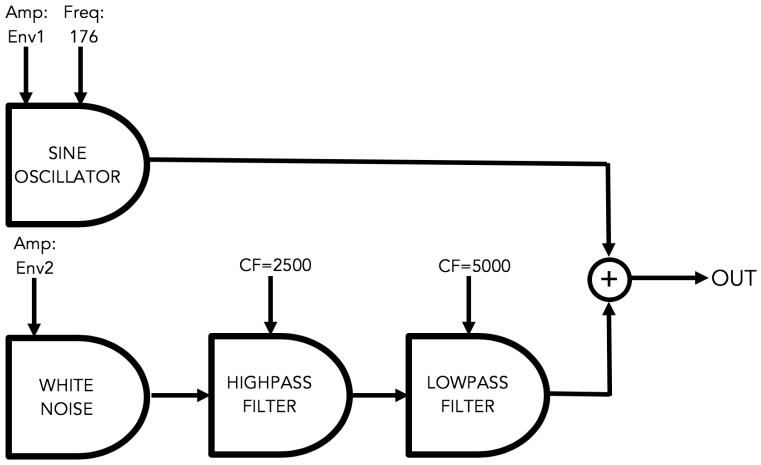

Figure 1: Flow diagram of TR808 snare sound.

Use poscil to create the sine wave oscillator (frequency indicated in Figure 1) and the **`noise`** opcode to create the white noise. Use **`buthp`** as the highpass filter and use **`butlp`** as the lowpass filter. The cutoff frequencies are indicated in figure 1.

The sine wave oscillator and the noise generator should use different amplitude envelopes as shown below:

Figure 2: Env1, sine wave amplitude envelope

The starting value of this envelope is 0.3 and the ending value is 0.000015.

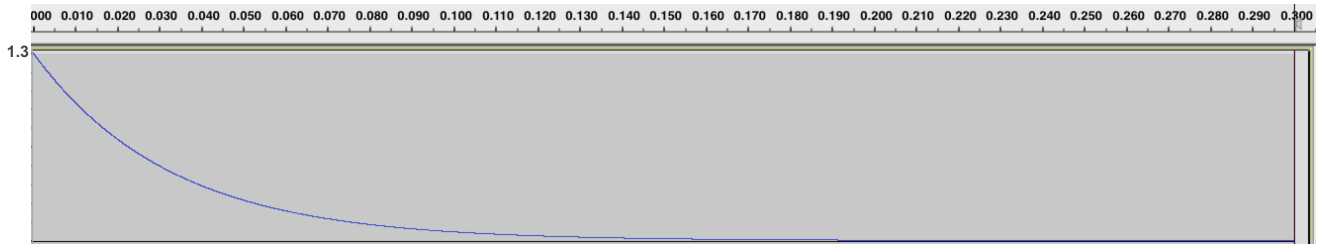

Figure 3: Env2, the noise generator amplitude envelope.

The starting value of this envelope is 1.3 and the ending value is 0.00013.

The duration of both envelopes is 0.3 seconds (this could even come from the score via p3).

Hints

- The sine wave and the noise signal will need different audio signals with differently named variables.
- Take care in routing the two envelopes to the correct sound element – the sine wave or the noise.
- Mixing two audio signals together simply involves adding them.

Figure 4: A snare drum. Note the snare - an array of thin springs - stretched across the underside of the drum.