Klavis — Grainity VCF

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[Klavis Grainity User Manual (PDF)](#)

Techniques for Hyper Complex, Densely Rhythmic Percussion with Klavis Grainity

The **Klavis Grainity** excels not only as a character-driven filter or effect, but as a tool for wild, complex rhythmic synthesis, especially when paired with Eurorack modulators, sequencers, and unconventional signal paths. Here's how you can exploit its architecture for polyrhythmic, percussive, and intricate patterns:

1. Exploit the Granular VCF Cycling with External Triggers

- **Percussive Input + External Triggers**: Route drum sounds, glitch samples, or noisy sources to Grainity's main input. Take clock, trigger, or gate patterns (from logic modules, sequencers, or polyrhythmic sources) into the **Detect** input. This decouples the rhythmic filter cycling from the audio input.
- **Recipes:**
    - Use complex polyrhythmic gate streams (e.g., Euclidean, rotating clocks, or prime divisions) into Detect for variety.

- Map two or more sequencers at different lengths (say, 5 and 7 steps) to produce interlocking rhythmic filter cycles.
- **Unique Effect**: Instead of regular cycling, Grainity advances filter structure steps every time the trigger/clock hits—great for granular stutter and unpredictable accenting.

2. Layer Rhythms with the Division Parameter

- The **Div** setting on the granular side multiplies the length of each step, making the filter "hang" on a structure stage for 2, 3, 4, up to 128 cycles.
- **Modulate Div** with CV (again possibly from a stepped random, or a different modulator running in an odd-length loop) to vary subdivision lengths, breeding more complexity.
- Division CV tied to a stepped LFO or pattern sequencer further scrambles and syncopates the rhythm.

3. Create Polyrhythm Through Chained Detect Inputs

- Send one rhythmically complex voice (e.g., a bursty gate) to Detect and a totally unrelated percussive stream/audio to Main Input. The two will overlay, generating unique rhythmic filter gates and timbral "pulses."
- Intermodulation emerges especially if the two rhythms aren't simply related—excellent for off-grid, shifting patterns.

4. Structure and Randomness for Pattern Mutation

- **Structure Selector**: Using longer or odd-number length filter structures (3, 5, 7, 8-steps, especially from the Structure table), you introduce subharmonics, flips, and accent positions that don't fit standard 4/4 grids. Each structure's step is essentially a "rhythmic accent" point.

- **Random Structures**: At the end of the list (shown with 'rX'), select algorithmically random step orders, making the rhythmically filtered output less predictable but musically complex.

5. Phasing, Flanging, and "Percussive Movement" with Phase/Track

- CV modulation of the Φ/Frq (Phase/Frequency) parameter (by a slow or stepped random generator) turns static patterns into morphing, flanging, and phasing rhythms.
- Use the **Track** mode to quantize filter cycling to musical intervals, creating layers of rhythmic ratios over your audio.
- For unison effects that vary with each hit/cycle, use phase-shift CV with irregular LFOs—great for chorus/flanger-enhanced percussion, injecting life and swing.

6. Self-Oscillation for Filter-Voiced Percussion

- On extreme resonance (self-oscillation), Grainity's multimode and granular VCFs can act as tuned drum voices. Use V/Oct or FM with fast pitch envelopes or stepped CV for percussive, Zaps, or "pinged filter" sounds—with the granular section repeatedly cycling the core at strange rates.

7. Mixing and Polarity Inversion for Texture and Impact

- **Mix** output balances between the clean MultiMode filter and the wilder Granular filter. Automate via Mix CV: Realtime fade between two flavors of the same percussion or flip phase for punch-enhancing "thwacks" at pattern accents.
- Invert polarity (long press Type/inv button) to introduce phase cancellation tricks—sometimes creating sharp, cut-up staccato effects.

8. Patch Ideas

A: Polyrhythmic Percussion Bus

- Drums or noise burst—> Main In
- Two the clock/gate sources of prime length—> Mix (with one going to Detect)
- Sequencer with polyrhythmic length—> Structure CV
- Stepped random or LFO—> Div CV
- Outputs: Take G.VCF and/or Mix to FX or direct to speakers.

B: Granular Filter Sequencer

- Feed complex percussion loop to Main In.
- Route a probabilistic trigger/gate pattern (from a burst generator or skipping clock divider) into Detect.
- Manually or CV-sequence Structure for unpredictable filter patterns.
- Modulate Phase/Frq and resonance for extra motion.

For more creative patching and inspiration, refer to the full Klavis Grainity User Manual PDF.

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