

# ADDAC Systems — ADDAC-506 SignalFlow

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- [Manual PDF](#)
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[ADDAC506 VC Stochastic Function Generator & Expansion Manual \(PDF\)](#)

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## Generating Hyper Complex Percussion and Rhythms with the ADDAC506

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The **ADDAC506 VC Stochastic Function Generator & Expansion** is a powerhouse for crafting densely rhythmic and hyper complex percussion sequences in your Eurorack setup. Here's how you can exploit its features to make polyrhythmic, multi-timbral, and idiosyncratic percussion:

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### 1. Use All Four Channels Independently for Polyrhythms

- **Four Independent Envelopes:** Each channel acts as a function generator/envelope that can be triggered or slewed by independent sources.
  - **Unsynced Cycles:** Trigger channels using unrelated or clock-divided gate/triggers, causing each envelope to loop at different rates. This immediately creates polyrhythms and cross-rhythms.
  - **External Randomization (Expansion):** Use the Expansion's RANDOM TRIGGER inputs to re-randomize envelope times mid-cycle for bursts, fills, and unexpected time changes.
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## 2. Embrace Complexity with Stochastic Rise/Fall Times

- **Variable RISE/FALL Minimum & Maximum:** Set each channel's RISE and FALL min/max to different, musically meaningful ranges (e.g., one short, one long, one medium, etc.).
  - **Randomization per Trigger:** Each new trigger/loop chooses a new envelope time within set limits, resulting in constantly shifting, non-repeating patterns. Modulate min & max with CV for evolving polyrhythmic envelopes.
  - **Lock Feature:** Lock certain channels to "freeze" a rhythm, then unlock and modify others for very intentional variability in patterns.
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## 3. Exploit Loop/One-Shot and Gate/Trigger/Slew Behavior

- **Loop Mode:** Use some channels as looping envelopes and others as one-shots to overlay static time signatures with freeform or stochastic elements.
  - **Slew Mode:** Slew can turn stepped voltage sequences (like LFOs or random CVs) into percussive envelope shapes, following CV inputs in a unique, organic way. Great for anti-clock "ratcheting" percussive effects or unexpected swells.
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## 4. Gate & EOR/EOF Outputs for Complicated Triggers

- **Gate Outs:** Use the GATE OUT during the "rise" segment to define gate length; patch these to drum modules, VCAs, or hit/reset/clock inputs of other sequencers or digital modules for off-grid triggers.
  - **EOR/EOF:** Use these outputs for meta-patterns – patch them to other envelope triggers, clocks, or sequential switches to create generation-on-generation polyrhythms.
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## 5. Modulate Everything for “Living” Percussion

- **CV Control Over Everything:** Feed LFOs, stepped modulations, random CV, or even audio-rate signals to RISE/FALL min or max, amplitude, offset, and curve parameters. Your envelopes become meta-instruments, responding dynamically in highly nuanced ways.
  - **Curve Control (LIN/LOG):** Morph between linear and logarithmic curves for each envelope to get snappier, more articulate “attack” phases or slow, booming decays—turning basic envelopes into a rich palette of percussion energies.
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## 6. Summed & Averaged Mix Outs for Layering

- **SUM/AVERAGE Outputs:** Use the sum or average of all 4 envelopes mixed together as a multi-layered modulation source—excellent for modulating filters, FX sends, or even as the master VCA envelope for a drum mix bus.
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## 7. Unique Percussive Voice Design

If using the outputs as voices: - **Ping “Analog” Percussion Circuits:** Patch envelope outs directly to resonant filters, LPGs, or dedicated analog drum circuits for wildly unique percussive pings and thwacks. - **Punch & Character:** Modulate amplitude and offset for each percussive hit. Pair with non-linear curves for snap. Try extreme settings to get glitchy, hyperactive digital artifacts.

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## Patch Examples

### Meta-Polyrhythm Patch

- **ENVELOPE 1:** Set to fast loop, RISE/FALL random range narrow (5–50 ms), into hat module trigger input
- **ENVELOPE 2:** Medium loop, wide random range, into snare trigger

- ENVELOPE 3: Triggered from an external rhythm generator, used as a complex modulation source for a drum synth's pitch or filter
  - ENVELOPE 4: One-shot mode with stochastic Rise, to play on "off-beat" kicks or FM percussion
  - Use SUM/AVG out to modulate a send effect amount for all drums or drive a resonant LPG for pseudo stereo panning.
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## Final Tips

- Always experiment with cross-patching random outputs, EOR/EOF, and random triggers.
  - Morph CV and amplitude throughout a performance for evolving, living rhythms.
  - The stochastic re-triggering means no two bars will ever be identical—harness this for unpredictable, intricate sequences.
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