Bubblesound — HexVCA

- Manual PDF

HEXvca Manual (Bubblesound)

Using HEXvca for Dense, Complex Rhythmic & Percussive Patches

The **Bubblesound HEXvca** is a six-channel voltage-controlled amplifier (VCA) with flexible normalization, mix outputs, linear/exponential switching, and DC-coupled inputs for both audio and CV. While it is not a voice or effect on its own, it is an **essential utility for routing, sculpting, and animating both audio and control voltages**—especially potent in dense, polyrhythmic, and complex percussion setups. Here's how to exploit its strengths:

1. Modular Polyrhythmic Percussion Routing

a. Assigning VCAs to Percussion Voices

- Route six different percussive sound sources (drums, metallic hits, noise bursts, modular drum synths) into the six HEXvca inputs.
- Patch separate or shared envelopes/LFOs/gate bursts to their respective CV inputs.
- Use the jumpers on the back to normalize CVs, allowing one gate or envelope to trigger multiple VCAs for tightly related patterns or "flams."

b. Complex Accent Patterns (using the Exp/Linear Switches)

- Assign different VCA response curves: Use exponential for snappier transients (kicks/snares), linear for smoother hits (hats, shakers).
- Modulate the CV with rhythmic LFOs, stepped random voltages, or Euclidean/chaotic gates for organic, “swung” micro-timing.

c. Creating Polyrhythms & Unusual Rhythmic Structures

- Feed in multiple complex rhythmic control voltages (such as from a trigger sequencer or random CV generator) into different VCAs’ CV inputs.
- Use cross-normalization jumpers so a single polyrhythmic CV can gate multiple percussive voices at offset rhythms—ideal for 5-against-7 time, etc.

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2. Using the Built-in Mixer for Rhythmic Layering

- Utilize the **1-3, 4-6, and 1-6 mix outputs** to blend clusters of percussive voices into “macro” percussion channels.
- Apply different CV patterns to overlapping groups (for example, channels 1, 3, 5 running in 7/8; 2, 4, 6 in 5/4) and sum to the main mix for composite polyrhythms.

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3. Dynamic, Punchy Percussive Manipulation

a. Rhythmic Gating and Chopping

- Use short, sharp envelopes or triggers to “chop” sounds for hyper-articulated rhythms or glitch percussion.
- Try 1V/oct or sequencer gates into the CV inputs for “melodic” gating or accent randomization.

b. Crossfade Percussive Textures

- Patch two or three sources (e.g., metallic digital drum, saturated analog hit, noise burst) into adjacent VCAs, using their VCAs' CVs to rhythmically blend and morph textures.

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4. Make it Unique, Punchy, and Percussive

- Use very short, high-voltage envelopes for instant "thwack"; modulate amplitude dynamically with random or cyclical CV for an organic, always-shifting groove.
- Patch CV into both the input and CV of a VCA for amplitude-modulated AM/ringmod-style percussive clangs (DC-coupled design supports audio-rate CV for wild effects).
- Try signal path "feedback" by routing the mixer output back into an audio input (careful with gain staging) for smashed, dirty parallel compression effects.

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5. Pro-level Tips

- The **SSM2164 VVCA chips** deliver super low noise and headroom—so don't be afraid to run hot transient signals for crisp punch.
- The module is only 7HP: Use multiple HEXvcas in a single skiff for high-density rhythmic matrixing.

Summary

The HEXvca is more than a utility; in a dense rhythmic patch, it becomes a core tool for sculpting, gating, accenting, layering, and dynamically remixing percussion. It's at its most powerful when paired with sequencer gates, complex clocks, random CV, and multichannel envelopes/LFOs. Use the normalization and built-in mixer to wring maximal complexity and "liveness" from your patch.
