AUDIOTENT

Voltage Source — Serum 2 Preset Library Guide

What Is Voltage Source?

Voltage Source is a Serum 2 preset library built around one idea: bringing the raw, unpredictable character of Moog hardware into your DAW with as much authenticity as possible.

The inspiration is the **Moog DFAM** (Drummer From Another Mother) — a semi-modular analog percussion synthesizer. The DFAM is beloved for its thick, punchy oscillators, its voltage-controlled filter, and its 8-step sequencer that lets you program pitch and velocity patterns by hand. It's the kind of instrument that rewards experimentation and produces sounds that are difficult to replicate in software.

To close that gap as much as possible, Voltage Source takes a multi-layered approach:

- The **square and triangle VCO waveforms** from the DFAM have been recorded and converted into wavetables used directly in Serum 2's oscillators.
- The **noise source** has been sampled straight from the hardware circuit.
- The **macro controls** have been designed to mirror the hands-on parameters you'd reach for on the front panel of the DFAM.
- The **LFOs** have been programmed to replicate the behaviour of the DFAM's 8-step pitch and velocity sequencers.

The result is a preset pack that doesn't just sound like the DFAM — it works like it too.



Understanding the DFAM (A Quick Overview)

If you've never used a DFAM, here's what you need to know to get the most from this pack.

The DFAM is a **percussion synthesizer**, but it's far more flexible than a traditional drum machine. At its core it has:

- **Two voltage-controlled oscillators (VCOs)** — VCO 1 and VCO 2 — that produce the body of your sound. You can set them to different pitches and blend them together, or use one to frequency-modulate the other.
- **A noise source** — for adding texture, transients, and grit.
- **A voltage-controlled filter (VCF)** — a low-pass/high-pass filter with its own decay envelope, letting the filter sweep open and close on every hit.
- **A voltage-controlled amplifier (VCA)** — which shapes the volume envelope of each hit. The VCA Decay control is one of the most important knobs on the machine: a short setting gives tight, punchy hits, while a longer decay gives booming, sustained tones.
- **An 8-step sequencer** — where the magic happens. Rather than just sequencing notes on a timeline, the DFAM's sequencer lets you set individual **pitch values** for each of its 8 steps, and individual **velocity values** for each step. The result is sequences that feel alive and rhythmic in a way that's very different from programming a typical synth part.

The sequencer also has a **SEQ PITCH MOD switch** with three positions:

- **Up** — the sequencer modulates the pitch of both VCO 1 and VCO 2 simultaneously.
- **Middle (OFF)** — no pitch modulation from the sequencer. Both oscillators stay at their set pitches.
- **Down** — the sequencer modulates the pitch of VCO 2 only, leaving VCO 1 fixed.

This is a fundamental part of the DFAM's character, and Voltage Source replicates all three behaviours directly in Serum 2.



The Oscillators — Sampled From the Source

In Serum 2, **OSC A** and **OSC B** are loaded with wavetables recorded directly from the DFAM's VCO 1 and VCO 2. These are not synthesised approximations — they are the actual waveforms from the hardware, complete with the subtle harmonic character that makes analog oscillators sound the way they do.

The DFAM's VCOs produce two distinct waveforms: a **square wave** and a **triangle wave**. Both have been captured and built into the wavetable, meaning you can move between them directly in Serum 2. Use the **WT POS** (wavetable position) knob on OSC A and OSC B to sweep between the square and triangle waveforms — at one end you get the harder, more harmonically rich square, at the other the softer, rounder triangle. This is the direct equivalent of flicking the waveform switch on the hardware.





OSC C — The DFAM Noise Character

OSC C is where things get more interesting than a typical noise oscillator. Rather than using a standard white noise source, OSC C is loaded with a sample recorded directly from the DFAM's **Noise / VCF Mod** circuit — and understanding why this matters helps explain a lot of what makes the DFAM sound the way it does.

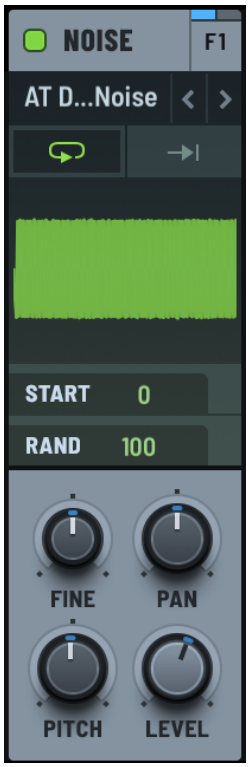
On the hardware, the Noise / VCF Mod knob is deceptively complex. To the eye it looks like a simple noise level control, but in the analog circuit it's doing several things simultaneously. As you increase it, it doesn't just raise the noise volume — it also changes how the filter responds, alters the perception of resonance, increases transient excitation at the front of each hit, shifts the saturation behaviour in the signal path, and affects how the envelope articulates the sound. The result is that the DFAM's noise feels woven into the voice of the instrument rather than sitting on top of it as a separate layer.

By sampling this circuit directly — rather than layering in a generic noise source — OSC C captures that embedded quality. **Macro 7 (Noise VCF Mod)** gives you control over this behaviour, and pushing it up will give you the same interaction between noise, filter, and transient character that you'd hear on the hardware.



The Noise Oscillator — Sampled From the DFAM

Serum 2's dedicated noise oscillator is also loaded with a sample taken directly from the DFAM — this time from the hardware's main noise output. Rather than using Serum's built-in white noise generator, having the actual noise from the DFAM's circuit keeps everything in the signal chain sourced from the same instrument, maintaining the consistency and character of the hardware throughout the patch.



The Macros — Your Front Panel

The 8 macro controls in Voltage Source are the primary performance surface. They've been designed to give you the most important controls from the DFAM's front panel in one place.

Macro	Name	What It Does
1	**VCO Decay**	Controls the pitch envelope decay — how quickly the pitch drops after each hit. Shorter values give a tight, punchy attack; longer values give a more tonal, sustained character.
2	**VCA Decay**	Controls the volume envelope decay — the length of each hit. This is one of the most expressive controls in the pack. Short values give tight percussion; long values open up into booming kicks and tonal hits.

Macro	Name	What It Does
3	**1-2 FM Amount**	Sets the amount of frequency modulation from VCO 1 into VCO 2. Increasing this introduces harmonic complexity and the metallic, clanging character that FM is known for — and that the DFAM is capable of.
4	**VCO 1 EG Amount**	Controls how much the envelope affects the pitch of VCO 1, shaping the pitch sweep on the first oscillator.
5	**VCF EG Amount**	Controls how much the filter envelope affects the filter cutoff. Higher values give a more dramatic filter sweep on each hit.
6	**VCF Decay**	Controls the filter envelope decay — how long the filter stays open after each hit. Use this in combination with the VCF EG Amount to shape the brightness and movement of each sound.
7	**Noise / VCF Mod**	Replicates the DFAM's Noise / VCF Mod behaviour — simultaneously shaping noise level, filter response, transient excitation, and saturation. Pushing this up doesn't just add noise; it changes the fundamental character of the sound.
8	**VCO 2 EG Amount**	Sets how much the envelope affects the pitch of VCO 2, giving you control over the pitch sweep on the second oscillator independently.

Start by reaching for **Macro 2 (VCA Decay)** — it's the single most transformative control in the pack and will immediately show you the range of sounds on offer, from tight snaps to long, evolving tones.



The LFOs — The Sequencer in Serum 2

This is where Voltage Source gets particularly creative. Rather than using a traditional step sequencer, the pack uses Serum 2's LFOs to replicate the behaviour of the DFAM's 8-step pitch and velocity sequencer. Here's how each one works.

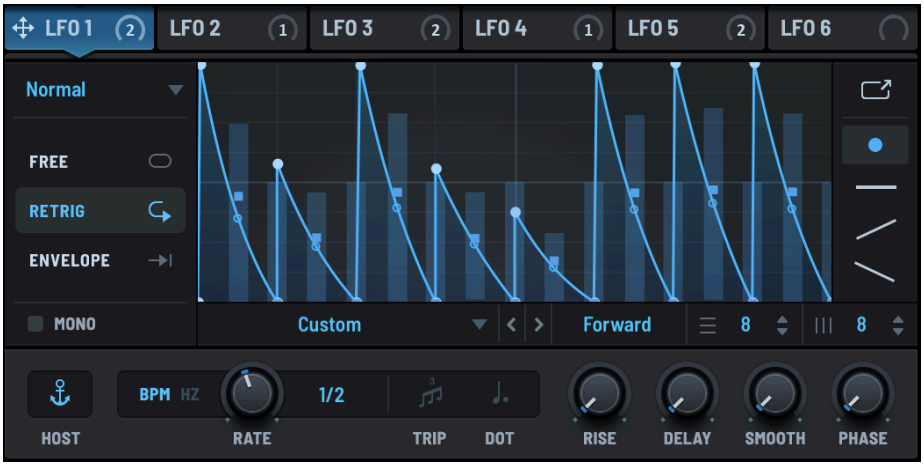
LFO 1 — Velocity Sequencer

LFO 1 replicates the DFAM's **velocity step sequencer** — the row of 8 knobs on the hardware that sets the loudness of each step.

The shape of LFO 1 has been carefully drawn to match the **exponential volume curves** that the DFAM's analog VCA produces. On the hardware, turning the VCA Decay knob doesn't just make hits longer — it changes the shape of the curve, giving each step a different dynamic feel. LFO 1 in this preset mirrors that behaviour precisely.

Key tip: Move **Macro 2 (VCA Decay)** while a sequence is playing. You'll hear the volume curves shift in real time, exactly as they do when you turn the VCA Decay knob on the hardware. This is the fastest way to go from a tight, punchy groove to a more open, sustained feel.

To customise the velocity pattern, click into LFO 1 and use the draw tool (•) to redraw the levels of each of the 8 steps. Each segment represents one step of the sequencer.



LFO 2 — VCF Envelope

LFO 2 provides the envelope for the **voltage-controlled filter (VCF)**. You might wonder why a separate LFO is needed for this — the reason comes straight from the hardware. On the DFAM, the VCF has its own independent decay control, meaning the filter envelope can have a completely different length to the main VCA envelope. Tying the filter envelope to LFO 1 would have locked the two together and lost that independence, so LFO 2 has been set up as a dedicated VCF envelope to preserve it. This means **Macro 6 (VCF Decay)** can shape the filter decay entirely separately from **Macro 2 (VCA Decay)** — just as on the hardware.

In practice, you'll want to draw similar 8-step patterns into LFO 2 as you have in LFO 1, so the filter follows the same rhythmic feel as the volume. But there are no rules here — having two independent patterns opens up creative possibilities that actually go beyond the hardware. You could have the filter opening on different steps to the volume peaks, creating movement and variation that gives the sequence a life of its own.



LFO 3 — Pitch Sequencer: Both VCOs (SEQ PITCH MOD — Up Position)

LFO 3 replicates the DFAM's pitch sequencer with the **SEQ PITCH MOD switch in the up position** — meaning it modulates the pitch of **both VCO 1 and VCO 2** simultaneously.

By default, LFO 3 is empty (no modulation drawn), which corresponds to the **middle/OFF position** on the hardware switch — no pitch sequencing, both oscillators stay fixed.

To activate pitch sequencing across both oscillators:

1. Click into LFO 3.
2. Select the **stepped draw tool** (the tool that creates flat, instant transitions between steps rather than smooth curves).
3. Draw in 8 steps of pitch values. Higher positions in the LFO editor correspond to higher pitch, lower positions to lower pitch.
4. Each step will create a distinct pitch jump — exactly like programming the 8 pitch knobs on the DFAM.

Think of LFO 3 as your global pitch sequence. Both oscillators follow it, giving you a unified melodic or rhythmic pitch pattern across the whole sound.



LFO 4 — Pitch Sequencer: VCO 2 Only (SEQ PITCH MOD — Down Position)

LFO 4 replicates the DFAM's pitch sequencer with the **SEQ PITCH MOD switch in the down position** — modulating the pitch of **VCO 2 only**, while VCO 1 stays at its fixed pitch.

This is one of the most powerful and characteristic sounds of the DFAM. With VCO 1 locked to a root pitch and VCO 2 moving through a sequence, you get a constantly shifting harmonic relationship between the two oscillators — the beating, detuning, and tonal movement that defines the DFAM's sequenced sound.

This approach also has a particular advantage when using OSC 1 to OSC 2 FM via **Macro 3 (1-2 FM Amount)**. Because LFO 4 only moves the pitch of OSC 2, OSC 1 remains a stable, fixed modulator. With FM, the pitch of the modulating oscillator has a direct impact on the harmonic content it produces — so keeping OSC 1 locked while OSC 2 sequences through pitches gives you controlled, predictable FM timbres that shift with each step, rather than the more chaotic results you'd get if both oscillators were moving at once.



Using the Stepped Draw Tool

For both LFO 3 and LFO 4, the **stepped draw tool** is essential for getting the right feel. Smooth LFO curves will create pitch bends and glides between steps — which can be interesting, but won't replicate the hard, instant pitch changes of the DFAM's sequencer. The stepped tool creates flat transitions that jump directly from one pitch to the next, just like the hardware.

In Serum 2, select the stepped draw tool from the LFO editor toolbar, then click and drag across the LFO grid to set your step values.

The Init Patch — Where to Start

The **AT DFAM Init** patch is the foundation of the library — a clean, unprocessed starting point that sets up all of the above in its most neutral state. No effects, no heavy modulation. Just the DFAM architecture running in Serum 2, ready for you to shape.

Use the Init patch to:

- Learn the signal flow before diving into the more processed presets.
- Build your own sounds from the ground up using the macro controls.
- Experiment with LFO 3 and LFO 4 step patterns with a clean canvas.

Tips for Getting the Most From Voltage Source

- **Start with the macros.** Before touching anything else, work through all 8 macros on any preset. They cover the most expressive range of the sound and are the quickest way to understand what each patch is doing.
- **Use LFO 1 as your velocity map.** Redraw the steps in LFO 1 to create your own velocity pattern. Quiet steps, loud steps, and everything in between — this is where the groove lives.
- **Experiment with LFO 3 as your pitch sequencer.** Draw in a pattern using the stepped draw tool, then try adjusting the OCT (octave) setting on OSC A and OSC B to shift the pitch range of each oscillator independently. For finer tuning, move the CRS (coarse tune) knob on either oscillator — this is the direct equivalent of reaching for the individual VCO Frequency knobs on the hardware, and is one of the quickest ways to find interesting harmonic relationships between the two oscillators within a sequence.
- **Sync the LFO rate to your DAW tempo.** The LFOs are set to sync to host tempo by default. Changing the rate division changes how many bars the 8-step sequence takes to complete — 1/8 gives you a fast, driving sequence; 1/2 or 1/1 gives slower, more open patterns.
- **Push the FM.** Macro 4 (1-2 FM Amount) can go from subtle warmth to full metallic clangour. Try it at moderate amounts alongside a pitch sequence on LFO 4 — the FM harmonics shift with each step, creating constantly evolving textures.
- **Layer the noise.** Serum 2's noise oscillator is loaded with the sampled DFAM noise output and sits independently of the tonal oscillators. Blend it in to add texture and transient attack, just as you would reach for the noise level on the hardware.
