

VS-1 Versa Synth — User Manual

Version 1.0.6

Thank you for choosing VS-1 Versa Synth.

VS-1 is an AI-driven synthesizer that generates sounds from a single natural-language prompt. Five synthesis engines — **Subtractive** / **FM** / **Karplus-Strong** / **Granular** / **Additive** — are unified in a single plugin, covering leads, pads, basses, plucks, keys, arpeggios, and textures.

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1. System Requirements

Item	Specification
OS	Windows 11 or later / macOS 13 (Ventura) or later
Format	VST3 (Windows / macOS) / Audio Unit (macOS only) / 64-bit
Internet	Required only for AI features (Generate / Refine)

2. AIDE AUDIO Account & Studio Pass

The synthesizer engine itself (5 engines, presets, MIDI, all DSP) **runs fully offline**. You only need to sign in to your AIDE AUDIO account when using the AI features (Generate / Refine / Random).

Sign-in Steps

1. When the plugin starts unsigned-in, the sign-in dialog appears automatically.
2. Click **Sign in with AIDE AUDIO** — the AIDE AUDIO site opens in your default browser.
3. Sign in (or create an account) — the plugin returns to the foreground and authentication completes.
4. Once authenticated, the credit balance (e.g. **CREDITS 30**) appears on the right side of the header.

Signing in later

Click the CREDITS badge any time to open the account dialog. You can also sign out from the same dialog.

Studio Pass

AIDE AUDIO Studio Pass is a \$5/month subscription that grants monthly credits usable across all AI-enabled AIDE AUDIO products.

- **New accounts:** Receive starter credits automatically on first sign-up.
- **Studio Pass subscribers:** Credits are refilled every month.
- Subscribe / cancel from the AIDE AUDIO Dashboard (<https://aideaudio.com/dashboard>).

3. Header

Left side

- **VS-1 logo / AIDE AUDIO badge** — clicking opens the **Feedback dialog** for sending feature requests or bug reports. See § 13 for details.

Right side (left to right)

Element	Function
Transport	Preset switching, Save, Load, Undo / Redo
MASTER knob	Output gain (− 24 to +24 dB, 0.1 dB steps). Rotary drag
OUT meter	Real-time output level meter (dBFS, stereo)
CREDITS badge	Shows current credit balance. Click to open the account dialog

Transport layout (left to right)

Button	Function
◀	Previous preset
Preset name	Click to open the Load Preset dialog
▶	Next preset
Save	Save the current state as a new preset
Load	Open the preset list dialog
↶	Undo (revert the most recent parameter change)
↷	Redo (reapply a reverted change)

4. Prompt Panel

The AI control hub, located directly below the header.

Text Editor

Type the kind of sound you want into the wide text field, in **natural language**.

- Examples: "warm analog bass", "glassy translucent pad", "bit-crushed retro arpeggio"
- A small **Random** button is overlaid at the bottom-right of the text field.

Action row (bottom of the panel, right to left)

Button	Function	Credits
Include FX	When checked, the AI will also rewrite the FX chain	—
GENERATE	Generate a new sound from the prompt	5 cr
REFINE	Tweak the current sound while preserving its character	2 cr
Shuffle	Local DSP randomization (synth params only, FX untouched)	Free
Random (overlaid in the text field)	AI generates a random prompt and immediately renders it	5 cr

5. AI Sound Design

5.0 Scope of AI Prompts

VS-1's AI Generate / Refine is **dedicated to synthesizer sound design**. Describe sounds you want using natural language, focusing on:

In scope:

- **Instrument category:** Lead / Pad / Bass / Pluck / Keys / Arp / Texture
- **Genre:** Trance / House / EDM / Cinematic / Ambient / Lo-Fi / Vintage / 80s synth pop, etc.
- **Sonic qualities:** "warm", "glassy", "eerie", "shimmering", "metallic", and similar adjectives

Out of scope (generation may fail or a generic preset is returned):

- Composition or rhythm requests (e.g., "a 4-on-the-floor track", "an 8-bar melody") — VS-1 generates sounds, not music
- Anything unrelated to synthesizer timbre (food, people, places, sexual, violent themes)
- Recorded audio or sample requests (e.g., "real piano recording", "vocals by a real singer") — VS-1 is a synthesis plugin

If a prompt falls outside this scope, the AI may fail to generate a sound. The SURPRISE / Random button can also help you find inspiration.

5.1 Generate workflow

1. Type your idea (e.g. "pluck with airy reverb").
2. Click **GENERATE** — the spinner rotates, and after 1–5 seconds the sound is ready.
3. The AI picks the most suitable engine (Subtractive / FM / KS / Granular / Additive) and constructs the parameters.
4. The 6 dynamic macros below get assigned the **6 most important parameters** for this particular sound, chosen by the AI.
5. The generated patch name appears in the transport's preset name area (it is a temporary name, not yet saved).

5.2 Refine

Use additional instructions like "a bit brighter", "longer release", or "more bit-crush" to adjust the current sound while keeping its character.

- Type the additional instruction in the same text field, then click **REFINE**.
- Most existing parameters are preserved; only the parts addressed by the instruction are altered by the AI.

5.3 Random (AI random prompt)

A small overlay button at the bottom-right of the text field. The AI invents a random prompt from musical vocabulary and immediately runs Generate on it. Useful as a starting point when you are out of ideas.

5.4 Shuffle (local DSP randomization)

Without consulting the AI, this overwrites the synth parameters (OSC / Filter / Env / LFO / Modulation) with random values. The FX section is left intact.

- No credit cost (handled offline).
- Useful for exploring serendipitous sounds, or for nudging an AI-generated patch into new territory.

5.5 Include FX

When checked, **Generate** and **Refine** will also touch the FX chain (Chorus / Delay / Reverb / Distortion / Compressor / EQ etc.). When off, only the synth core is rewritten and the FX chain stays the same.

6. Dynamic Macros

The 6-knob area directly below the prompt panel (2 rows × 3 columns).

Behavior

- Always exactly **6 knobs**.
- Which 6 parameters are mapped is **decided by the AI per sound**.
- Each knob shows the parameter name as a caption, and the current value with units below (e.g. `Cutoff 2.20 kHz` , `Drive 35%`).

Operation

Action	Result
Left-drag	Continuously change the parameter
Shift + drag	Fine adjustment (5 × precision)
Double-click	Return to default value
Mouse wheel	Increment / decrement (discrete steps)
Right-click	Context menu (MIDI Learn etc.)

MIDI Learn

Right-click → **Learn** displays "MIDI Learn: move any controller to bind to ..." in the status banner. Move any MIDI controller to bind it automatically. Right-click → **Clear** removes the binding.

7. Presets

Factory presets

VS-1 ships with **105 factory presets** in 7 categories:

- Lead / Pad / Bass / Pluck / Keys / Arp / Texture

Each category contains 15 presets, illustrating typical uses of all five engines.

Save

Click **Save** in the header, name the preset, and it is stored as a user preset. The save location is

`%APPDATA%\AIDE AUDIO\VS-1\Presets\` .

Load

Click **Load** in the header, or click the preset name itself, to open the Load Preset dialog.

- Filter by category chip
- Star (★) favorites
- Delete button on the right edge of each row (user presets only)
- Click outside the dialog to close it

Program Change

Sending MIDI Program Change from your DAW switches presets in the listing order (favorites first, then newest). Useful for swapping presets during live performance.

8. Advanced Panel

Click the **Advanced ▼** button at the bottom of the window to expand the detailed editing area.

9 tabs

Tab	Contents
SYNTH	OSC1 / OSC2 / Sub / Noise / Mix / Filter / Filter Env / Amp Env / Pitch Env / LFO / LFO 2 / Engine / Voice
FX	Effects (5 sub-pages — see below)
MOD	8-slot modulation matrix
WT	Wavetable parameters (active when Subtractive engine uses Wavetable mode)
FM	FM engine parameters (6 operators)
KS	Karplus-Strong engine parameters
GR	Granular engine parameters
ADD	Additive engine parameters
SEQ	Step sequencer (up to 8 steps)

FX tab sub-pages (5)

The FX tab has a sub-page selector at the top that organizes effects by purpose.

Sub-page	Contents
MOD	Chorus / Flanger / Phaser / Tremolo (modulation)
SPACE	Delay / Reverb / Side-chain Duck (spatial)
DYN	Distortion / Compressor / Bitcrush / Limiter (dynamics)
EQ&MIX	HPF / LPF / Parametric EQ / Character / Master / Arp
ENHANCE	Exciter / Auto-Wah (enhancement)

Key FX parameters

Chorus (MOD sub-page)

- Standard Rate / Depth / Mix, plus **Feedback** to push the wet path into resonant ensemble territory.

Flanger (MOD sub-page)

- Short delay (~3 ms) with feedback for metallic sweeps — a different character to the Phaser.
- Parameters: Rate / Depth / Feedback / Mix.

Delay (SPACE sub-page)

- BPM-synced or free-running delay. In addition to Feedback / Mix:
 - **Low Cut / High Cut** — HP/LP filters in the feedback path for tape-style darker tails.
 - **PingPong** — alternates the wet between L and R for ping-pong stereo motion.

Reverb (SPACE sub-page)

- Size / Mix plus:
 - **Damping** — high-frequency decay (room material feel).
 - **Width** — stereo spread.
 - **Freeze** — captures the tail and holds it indefinitely.
 - **Shimmer** — feeds an octave-up granular pitch shifter into the reverb feedback for Eno-style ambient gradients.
 - **Pre-Delay (v1.0.5+)** — 0 to 200 ms. The dry signal passes through with zero latency while only the reverb tail is delayed. Use 20-50 ms to push pad/vocal/lead in front of the reverb so the attack lands cleanly before the tail blooms; use 80-150 ms for cinematic large-hall textures. Leave at 0 for short percussive sounds and bass.

Tremolo / Auto-Pan (MOD sub-page)

- LFO-driven amplitude modulation. **Stereo** parameter crossfades from 0 = mono tremolo to 1 = full auto-pan.
- Parameters: Rate / Depth / Stereo / Shape.
- **Shape (v1.0.5+)**: choose the LFO waveform from Sine / Triangle / Square. **Sine** produces smooth amplitude movement (pads, EP). **Triangle** is a more articulated symmetric linear sweep. **Square** is a

hard on/off chop (vintage organ / Leslie cabinet, glitch percussion). Use slow rates (1-4 Hz) for rhythmic chopping and fast rates (8-15 Hz) for glitch artefacts.

Distortion (DYN sub-page)

- Master-bus standalone distortion. Shape the timbre with Type / Drive / Tone / Mix, and tune the harmonic balance continuously with Asymmetry.
- **Type:** Tape (gentle saturation, soft 3rd harmonic) / Tube (asymmetric clipping, warm even harmonics) / Fuzz (hard sigmoid, square-leaning) / Bitcrusher (bit-depth reduction + sample-and-hold).
- **Asymmetry (-1 to +1, v1.0.5+):** bias the saturation curve. **0** = symmetric (default). **Negative** emphasises odd harmonics (solid-state / fuzz grit). **Positive** emphasises even harmonics (tube warmth). Keep $|\text{value}| \leq 0.5$ to avoid audible DC offset.
- The final stage runs through **softClip** for safe saturation (D-VS1-022).

Compressor (DYN sub-page)

- Feed-forward compressor with five clear knobs: Threshold / Ratio / Attack / Release / Makeup.
- **GR meter (v1.0.3+):** visualises the gain reduction (0 to -12 dB). Uses the same bar UI as the Limiter so you can compare compression amounts visually between the two stages.
- **SC HPF (Sidechain HPF, v1.0.5+):** 20 to 500 Hz. A high-pass filter applied only to the detector path. Low-frequency content is removed from the detector so that kicks and 808s do not trigger pumping on the rest of the mix. 20 Hz = effectively bypassed; 80-120 Hz is the canonical "bass-safe master compressor" setting. Keep at 20 Hz when you genuinely want sub-bass to drive the compression.

Limiter (DYN sub-page)

- A streamlined Maximizer-style UI: **Threshold (-60 to 0 dB, range expanded in v1.0.3)** and **Gain** (0 to +18 dB) plus a built-in GR meter. Push the input with Gain and shape the ceiling with Threshold to dial in loudness intuitively. The expanded range now supports deeper limiting when needed.
- Attack / Release / Ceiling are fixed internally at musically optimised values (1 ms / 100 ms / -3 dB).
- **GR meter:** visualises the gain reduction (0 to -12 dB). The longer the bar grows, the harder you are compressing — making it easy to see at a glance whether Gain is being pushed too far.

Exciter (ENHANCE sub-page)

- High-frequency extraction + tanh soft saturation generates even and odd harmonics. Adds sparkle and air more naturally than EQ.
- Parameters: Freq (high-pass cutoff) / Amount (saturation) / Mix.

Auto-Wah (ENHANCE sub-page)

- Peak follower + state-variable bandpass filter — a Mu-Tron-style envelope-following wah.
- Parameters: Sens / Min / Range / Reso / Mix.

Pitch Envelope section (in the SYNTH tab)

A per-voice pitch envelope that fires instantly on note-on. Use it to create the snap-attack character that defines modern EDM Lead sounds (a quick pitch dive into the note).

- **Amt** (-12 to +12 semitones, default 0): Maximum pitch offset at the start of the note. Positive values dive from above; negative values rise from below.
- **Decay** (1 to 500 ms, default 50): How long it takes for the pitch to settle back to the played note. Shorter values give a sharp snap, longer values yield a smooth sweep.
- With the default Amt = 0 the envelope has no audible effect, so existing patches are unaffected (Pad-safe).

Voice section (in the SYNTH tab)

- **Mode**: Selects mono / poly playing mode.
 - The legacy `voicePanSpread` parameter has been removed in v1.0.3 (Phase 76c). Use Chorus / Reverb / Delay (ping-pong) / Master Width to add stereo width.

Operation

- Each section header has a **power icon** for per-section ON/OFF (FX sections etc.).
- Knob behaviour is the same as the dynamic macros (drag / double-click / Learn etc.).
- Hovering a parameter for ~1.5 seconds reveals a **tooltip** with a description.

9. Synthesis Engines

VS-1 implements 5 engines as **mutually exclusive** (no simultaneous layering). The engine is normally chosen automatically by the AI, but can be switched manually from the **Engine** section of the SYNTH tab.

9.1 Subtractive (with Wavetable)

- **OSC1 / OSC2**: Saw / Pulse / Triangle / **Wavetable**. Detune, Fine, PW, Unison (OSC1 only), Spread.
- **Sub**: Sub-oscillator at -1 oct or -2 oct. **Sub On** toggle fully mutes the sub regardless of level (v1.0.3+).
- **Noise**: White / Pink noise. **Noise On** toggle fully mutes noise regardless of level (v1.0.3+).
- **Mixer**: Per-source levels for OSC1 / OSC2 / Sub / Noise. Sub / Noise can be muted via their On toggle independently of Level.
- **Filter**: 7 types — LP12 / LP24 / BP / HP / Notch / Steiner / Diode. Cutoff, Reso, Env Amount, Key Track.
- **Wavetable mode** (when OSC1 / OSC2 selects Wavetable): use `wtPos` in the WT tab to morph between positions (0..1).
- **Warp / Symmetry** (Wavetable mode): per-OSC controls in the WT tab. **Warp** applies CZ-style phase distortion to brighten the harmonic content; **Symmetry** introduces a PWM-like effect on arbitrary

waveforms.

- **Built-in tables:** 12 wavetables — Saw / Pulse / Triangle / Sine / Vocal Ah / Bell / Spectral / Formant Eh / Vocal Ee / Detuned Saw / Wavefolded etc.

9.2 FM

- DX-style **phase modulation (PM)** with 6 operators.
- 8 algorithms (operator routing patterns).
- Feedback applies only to OP1 and OP2.
- Per-operator Ratio / Level / ADSR are edited in the FM tab.

9.3 Karplus-Strong (KS)

- Physical modeling of plucked strings — ideal for plucks, steel guitar, and harp-like sounds.
- KS tab: Damping, Pluck Position, String Tone, Pickup Tone, Brightness.
- **Tension:** An allpass-tuning macro that simulates string tension. Higher values move toward stiff metal-string character; lower values toward looser nylon-string feel.
- **Harmonics:** Harmonic injection amount — useful for adding acoustic-guitar brightness or harpsichord shimmer.

9.4 Granular (GR)

- Plays short grains at high density to create sustained or spatial textures.
- GR tab: Grain Size (5–500 ms), Density (1–80 grains/sec), Pitch Spread (0–1200 cents), Position, Window Shape.
- **Texture:** A single macro that moves Size and Density inversely — intuitive control between coarse grains and smooth mist.
- **Source:** Choose from 10 built-in samples (Pad / Choir / Glass / Wood / Vinyl / Wind / Vocal Pad / Glass Resonator and more).
- Effective for misty / shattered textures, bell-like tones, and lush pads.

9.5 Additive (ADD)

- Additive synthesis. Independently controls the amplitudes of fundamental and harmonics.
 - ADD tab: Partial Count, Spread, Tilt, Even/Odd Balance, Decay.
 - **Partial Spread:** Detunes even harmonics by $\pm$ cents to add stereo and ensemble feel — ideal for chorus-like richness.
 - **Low Cut:** Suppresses lower partials to focus presence in the mid-high range.
 - **Shimmer:** Adds slight modulation to upper partials for an airy / glassy quality.
 - **Preset:** 12 curated presets — Organ / Bell / Vocal / Saw Stack / Pad Wash / Vox Choir / Sine Stack / Detuned Organ etc.
 - Suitable for organ-like timbres, bells, and formant-style sounds.
-

10. Mod Matrix & LFO 2

The **MOD** tab in the Advanced panel hosts an 8-slot modulation matrix.

Per-slot configuration

- **Source** (10): Off / LFO / LFO 2 / FilterEnv / AmpEnv / Velocity / Aftertouch / ModWheel / KeyTrack / Random
- **Destination** (16): Off / Pitch / Cutoff / Resonance / Osc1 Pitch / Osc2 Pitch / Osc Mix / WT1 Pos / WT2 Pos / Drive Amt / FM Fbk / LFO Amt / Sub Lvl / Noise Lvl / Pan / Vol
- **Amount**: −1.0 to +1.0 (0 disables, negative inverts)

LFO vs. LFO 2

- **LFO**: The primary LFO built into the synth core. Routed directly to a single destination via `lfoDest` (Pitch / Cutoff / PW / Off).
- **LFO 2**: Available only as a Mod Matrix Source — can drive multiple destinations simultaneously.

LFO main parameters

- Rate (0.01–20 Hz, or BPM-synced 1/16 to 4 bars)
- Shape (Sine / Triangle / Square / S&H)
- Phase, Depth, Fade-in
- When Sync is on, Rate switches to musical note values.

11. Step Sequencer

The **SEQ** tab in the Advanced panel — a **pitch sequencer with up to 8 steps**.

- **Step count**: 1–8 (`seqLength`)
- **Per step**: Pitch −24 to +24 semitones
- **Rate**: BPM-synced (note values such as 1/16, 1/8, 1/4)
- **Gate**: 0.05 to 1.0 (shared gate length for all steps)
- **ON/OFF**: `seqEnabled` toggle

Drag each step's Pitch knob to set the value. The sequencer fires on Note On — using the held note as the root, it adds each step's pitch offset to produce the output.

12. MIDI

MIDI Learn

Right-click any knob → **Learn** to bind an external MIDI controller to that parameter. While the status banner shows "Listening for MIDI...", move the controller to bind it.

MPE (MIDI Polyphonic Expression)

- VS-1 **automatically detects MPE** (turns on when ch 2-16 Pitch Bend or CC74 input is observed).
- When on:
 - ch 1 = Master Channel (broadcast)
 - ch 2-16 = Member Channel (per-voice)
- Per-voice Pitch Bend, Aftertouch, and Timbre (CC74) apply to individual voices.
- Use Seaboard, LinnStrument, Push 3, and other MPE controllers for highly expressive performance.

Program Change

Receiving a MIDI Program Change from your DAW switches presets in the listing order (favorites first).

13. Feedback

Click the **VS-1 logo** or the **AIDE AUDIO badge** in the header to open the Feedback dialog.

What you can submit

- **Category:** Feature request / Bug report / Other
- **Message:** free-form text (up to 4000 characters)

When you press **Send**, the following are transmitted to AIDE AUDIO servers along with your message:

Field	Example
Plugin version	e.g. 1.0.4
OS name	e.g. Windows 11
DAW name	e.g. Cubase / Studio One

Optional error log on failure

When AI Generate / Refine fails (e.g. due to network issues), a **"Send Log"** button appears on the right side of the error banner. Pressing it transmits the following (opt-in, per-action consent):

- Error code / error message
- Plugin version / OS name / DAW name
- The most recent prompt text

Privacy notes

- **Every transmission happens only at the moment you click a button** — there is no automatic transmission whatsoever
- Crash dumps, stack traces, and any background telemetry are **never** collected
- Submitted data is used solely for product improvement and bug investigation
- You can request deletion of submitted data via the contact form

See EULA § 2 d) and the Privacy Policy for details.

14. FAQ / Troubleshooting

Q. The plugin doesn't appear in the DAW list

A. Confirm that the bundle is installed at `C:\Program Files\Common Files\VST3\AIDE AUDIO\VS-1.vst3\`. Run a VST3 rescan in your DAW. If it still doesn't show, check that the above path is included in your DAW's VST3 search paths.

Q. Generate fails with "Network unreachable"

A. Confirm that your firewall allows HTTPS (port 443) traffic to `aideaudio.com`. In environments with restricted external access (corporate networks etc.), AI features cannot be used.

Q. "No credits" is displayed

A. Your credit balance is exhausted. Click the CREDITS badge → from the account dialog, subscribe to Studio Pass. Even without a subscription, starter credits are granted automatically on first sign-up.

Q. I cancelled, but credits are still there

A. After cancellation, you can keep using credits until the paid period ends. At the end of the period, the balance is reset to 0 and the Active badge disappears.

Q. CREDITS shows "— CREDITS"

A. You are signed out. Click the CREDITS badge and sign in. Also check your network connection.

Q. My presets disappeared

A. User presets are stored under `%APPDATA%\AIDE AUDIO\VS-1\Presets\`. Copy this folder elsewhere to back them up.