VHIKK X

FORGE-TME / MULTI-ALGORITHM STEREO SYNTHESIS VOICE + PROCESSOR / 24HP EURORACK

Reference Manual

Unofficially Compiled by EDGEY / edgey.com

An unofficial, reorganised manual compiled from the Forge-TME Vhikk X web guide and algorithm reference (page revision dated July 22 2026), plus the official annotated panel diagram. Nothing here has been invented: every control description, procedure and specification is taken from the manufacturer's own documentation and reordered for faster bench reference.

Format	24HP eurorack, 15mm depth below panel, side-entry power
Algorithms	9 per bank, 4 banks planned (36 total). Launch firmware ships bank 1 only.
Firmware	USB-C, UF2 bootloader, USB Mass Storage drag and drop
Warranty	2 years from purchase date
Support	contact@forge-tme.com

CONTENTS

Read this first

Vhikk X is one module holding two halves. The left side is the generator: a set of oscillators whose exact type depends on the selected algorithm. The right side is the processor: a delay-based structure that morphs continuously from distinct repeats (delay-like) into diffused repeats (reverb-like), with a frequency shifter inside its feedback loop.

> Signal flow, launch firmware. generator (plus any external audio patched in) -> filter and tone-shaping section -> VCA -> processor -> stereo output.

Cheat sheet

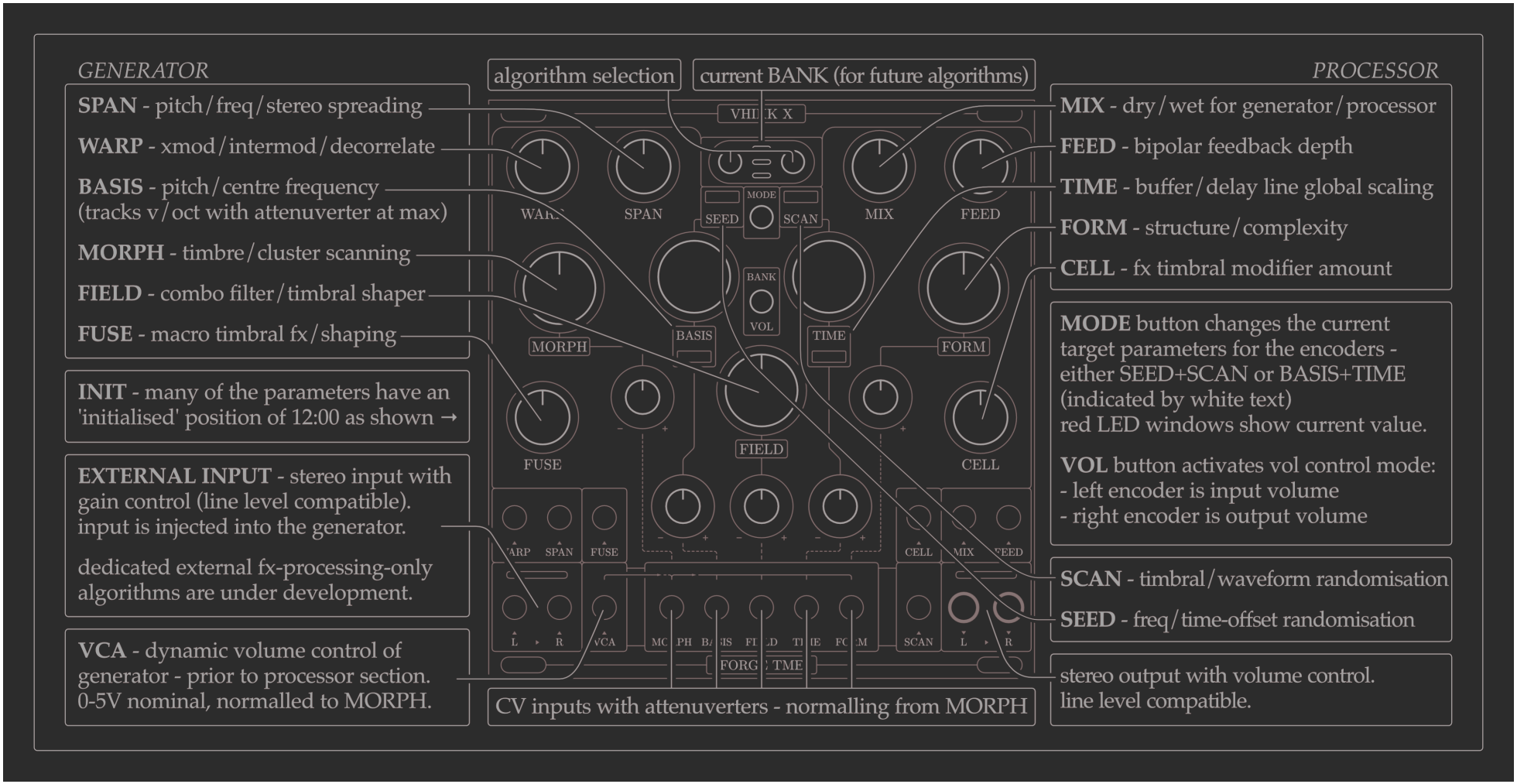
Six things that catch people out. Each is covered in full on the page listed.

Neutral is noon	WARP, SPAN, MIX, FEED and FIELD are bipolar, initialised at 12:00.	p.4
Encoders are shared	MODE swaps the live pair. White label is active, red glow is inactive.	p.4
VCA is already open	Unpatched, an internal +5V offset holds it open. No patching needed.	p.5
Normalling cascades	MORPH overrides VCA, which feeds the other attenuverted inputs.	p.5
Settings persist	Encoder parameters write themselves after about 30 seconds idle.	p.6
Mono is one cable	L normals to R. One cable from R gives a mono sum.	p.5

First patch, from cold

1. Power down the case and connect the ribbon as described on page 5.
2. Patch a single cable from the R output for a mono sum, or both L and R for stereo.
3. Set WARP, SPAN, MIX, FEED and FIELD to 12:00. Leave the VCA input unpatched.
4. Power up and pick an algorithm with the two toggle switches. The switch positions for all nine are drawn in section 7.
5. Press MODE until BASIS and TIME are lit white. Left encoder is pitch, right encoder is delay scaling.
6. Press MODE again for SEED and SCAN. These are the randomisation controls and this is where most of the character lives. On firmware v003 and above, press both buttons together to randomise them internally.
7. Bring MIX up from noon toward the processor side, then work FEED and FORM.

1 / Panel diagram



Official Forge-TME annotated panel drawing. Generator controls on the left, processor controls on the right, CV inputs along the bottom.

2 / Control quick reference

Algorithm-specific behaviour for WARP, SPAN, MORPH, FUSE, SEED and SCAN is listed per algorithm in section 7. CW means clockwise, CCW counter-clockwise.

GENERATOR / left side

SPAN	Oscillator spread and tuning. Pitch, frequency and stereo spreading. Neutral position 12:00.
WARP	Two different types of generator cross-modulation. Cross-mod, intermod, decorrelate. Neutral position 12:00.
BASIS	Root frequency for all oscillators. Pitch and centre frequency. Tracks 1V per octave with the BASIS attenuverter at maximum. Encoder-targeted.
MORPH	Generator timbral scanning. Timbre and cluster scanning.
FIELD	Filtering centre frequency. Combo filter and timbral shaper. Neutral position 12:00.
FUSE	Algorithm-dependent timbral control. Macro timbral effects and shaping.
SEED	Manual internal randomisation scanning: delay taps, frequency and wave offsets, notch spacing. Encoder-targeted. No CV input by design, it is meant for hand control.
SCAN	Randomisation scanning of internal timbral and waveform parameters. Encoder-targeted.

PROCESSOR / right side

MIX	Dry/wet blend between generator and processor. Neutral position 12:00.
FEED	Processor feedback, bipolar depth. Neutral position 12:00. Also sets the mix type of the frequency shifter that sits in the feedback loop. CCW takes output direct from the frequency shifter. CW mixes shifter output with raw delay output for a pronounced moving multi-notch filter effect.
TIME	Root scaling of delay lengths. Buffer and delay line global scaling. Encoder-targeted.
FORM	Processor structure and complexity.
CELL	Frequency shift amount, the fx timbral modifier.

ENCODERS AND BUTTONS

The two central encoders target different parameters depending on the current MODE. The active target is shown in white text, inactive labels glow red. BASIS, TIME, SEED and SCAN each have a light window showing their current value.

MODE state	Left encoder	Right encoder	Lower button then does
State A	BASIS	TIME	Engages VOL, encoder volume control
State B	SEED	SCAN	Changes the selected BANK
VOL mode	Input volume	Output volume	Text labels off, lower windows show levels, upper windows are clip indicators

Both buttons	v003 and above, in normal operation: internally randomise SEED and SCAN.
Hold top 5s	v003 and above: enter BASIS/TIME save-mode selection. See page 6.
Hold lower 5s	v003 and above: enter BASIS calibration. See page 6.
BANK note	Early firmware carries a single bank, so BANK selection is disabled until future updates. The three red lights between the toggle switches show the current bank.

3 / Jacks, power and CV normalling

POWER

The power connection is side-entry, with a cutout in the main circuit board for cable clearance. Ensure the red stripe (-12V) is closest to the 'RED' label on the rear of the circuit board, which is red stripe down as viewed from behind. The input is reverse polarity protected.

The USB-C port on the right side of the module is for firmware updates only. It can be plugged in without eurorack power applied, but Vhikk X still requires a standard eurorack supply to make sound. The update method is in section 9.

JACKS

L / R in	Stereo audio input, bottom left, with gain control, line level compatible. The two inputs are normalled together, so a mono source into either jack works. Input is injected into the generator. The exact signal path is algorithm-dependent.
L / R out	Stereo audio output, bottom right, with volume control, line level compatible. L is normalled to R, so one cable from R gives a mono sum. Output volume silences the output at its minimum value.
VCA	Targets the internal stereo VCA, 0-5V nominal. See below.
Attenuverted CV	MORPH, BASIS, FIELD, TIME, FORM. Five inputs in the bottom centre, each with its own attenuverter.
Summed CV	WARP, SPAN, FUSE, CELL, MIX, FEED and SCAN are summed with the value set by their panel control.
No CV input	Volume controls and SEED. SEED is a very wide-ranging parameter designed for manual control, and in testing the VCA input proved more useful than a SEED CV.
LED windows	The long windows above the input and output jacks are level meters. White is left, red is right.
Gain and headroom	The input and output volume ranges suit a wide spread of signal levels, both inside a eurorack system and directly with line level equipment. The signal path has plenty of headroom and is designed to soft-clip at each gain stage.

THE VCA

The VCA input targets an internal stereo VCA, giving amplitude control without an external stereo VCA, and letting the VCA sit ahead of the delay and reverb sections. Its position in the signal path is algorithm-dependent, and in all nine launch algorithms it is placed after the filter section and before the processor.

With nothing patched, an offset equivalent to +5V is present, so the VCA is open. An external +5V opens it fully. Voltages above that overdrive whatever follows the VCA in the signal path.

NORMALLING PRIORITY, HIGHEST FIRST

MORPH patched	Normalled to the 4 other inputs: BASIS, FIELD, TIME, FORM. Overrides the VCA normalling below.
VCA patched	Normalled to the 5 other jacks: MORPH, BASIS, FIELD, TIME, FORM, each passing through its own attenuverter.
Neither patched	A small offset is normalled to MORPH, BASIS, FIELD, TIME and FORM, which turns the attenuverters into fine-tune controls.

4 / State saving

All encoder-targeted parameters are saved internally and retain their values through power cycles. There is a deliberate delay for wear levelling: parameters left unchanged for approximately 30 seconds get written to memory.

SEED, SCAN	Always saved per algorithm.
VOL	Always saved globally.
BASIS, TIME	Selectable. Global saving keeps tuning and synchronised delay times consistent across different algorithms. Per-algorithm saving lets each algorithm keep its own copy. Per-algorithm is the default, and the choice is remembered until changed.

Setting the BASIS/TIME save mode at power-on

Hold the top button (MODE) while powering on for global saving. Hold the bottom button while powering on for per-algorithm saving.

Changing it while the module is running, v003 and above

1. Hold the top button for approximately 5 seconds.
2. You enter param-save-mode with both logo LEDs blinking. The rest of the module carries on as normal and the sound does not cut out.
3. Top button selects GLOBAL BASIS/TIME saving.
4. Bottom button selects PER_ALGO BASIS/TIME saving.
5. Press both buttons to save and exit. The current algorithm resets with the new setting.

5 / BASIS calibration

> Firmware v003 and above only. Set the BASIS attenuverter fully clockwise before starting. The module keeps playing throughout, always using the updated calibration values, so you can test tracking as you go.

1. Hold the bottom button for approximately 5 seconds. You enter calibration mode with the BASIS LED blinking.
2. Apply 1V to the BASIS input from the CV output of your V/oct source. This should be C2, but check your source's manual for its voltage and octave offsets.
3. The left logo LED, between WARP and SCAN, lights up when you are in the correct range. Press the bottom button to lock in the low value.
4. Apply 3V to the BASIS input. This should be C4, again subject to your source's offsets.
5. The right logo LED, between MIX and FEED, lights up when you are in range. Press the top button to lock in the high value.
6. Press both buttons to save the calibration and return to normal mode.

Out of range	The red LEDs blink an error pattern and the value is ignored.
Sawtooth test	Hold the top button for 5 seconds to mute the current algorithm and play a sawtooth wave instead. Useful for letting another module or an audio interface lock onto the tuning for system-level calibration.
Reset	Hold the bottom button for 5 seconds to reset calibration to default values.

6 / Signal architecture

The launch firmware is an extension and reimagining of the algorithms on the original Vhikk. Everything here applies to all nine launch algorithms. Individual knob behaviour is on page 4.

Cluster scanning	A smooth crossfading scan through sets of frequency and wave pairs. Picture a wavetable scan parameter where each distinct wave position also carries an associated frequency offset. In the modes that use cluster scanning, these wave and frequency offsets are different for every oscillator.
Two processors	The nine algorithms use one of two processor characters: a 'dungeon metallic delay/reverb' or a 'reflekta diffuse delay structure'. Either way the structure transforms smoothly from distinct though processed repeats into diffused repeats with increasing echo density and modulation.
Frequency shifter	Sits inside the processor feedback loop. CELL sets the shift amount, FEED sets the mix type.
VCA placement	For all nine launch algorithms, after the filter section and before the processor.
External audio	Mixed with the generator signal, then run through the filter and tone-shaping section and the processor.
1V/oct	With the BASIS attenuverter at maximum, BASIS tracks at 1V per octave.
Coming later	The builder lists dedicated external effects-processing-only algorithms as under development, alongside the three further banks.

> What does not change. MIX, FEED, BASIS, TIME, FORM, FIELD and CELL behave exactly as described on page 4 in all nine algorithms.

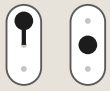
7 / Algorithm reference

Each combined position of the two toggle switches selects a different algorithm, nine in total per bank. The graphic beside each number shows the two switches as they sit on the panel: left switch on the left, right switch on the right.

ALGO 1 — 2 oscillators (analogue-style) with dungeon metallic delay/reverb

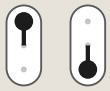
WARP	CCW: exponential cross-mod CW: ring-mod level
SPAN	Modulator relative tuning offset
MORPH	Carrier waveform scan: pulse / saw / sine
FUSE	CCW: chorus mix CW: filter resonance and shape
SEED	Multi-notch filter frequency randomisation + delay tap spacing
SCAN	Modulator waveform scan: pulse / saw / sine

ALGO 2 — Dynamic waveshaping oscillator pair with reflekta diffuse delay structure



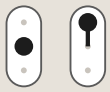
WARP	CCW: modulation index + modulator feedback CW: modulation index + carrier feedback
SPAN	CCW: carrier frequency CW: carrier frequency + stereo spread
MORPH	Carrier waveform scan
FUSE	CCW: delay line audio rate modulation CW: saturation gain
SEED	Multi-notch filter frequency randomisation + delay tap spacing
SCAN	Base waveshape set randomisation

ALGO 3 — Multi-sine cluster oscillator bank with dungeon metallic delay/reverb



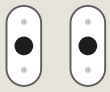
WARP	CCW: oscillator phase feedback CW: inter-oscillator exponential frequency cross-mod
SPAN	CCW: frequency spread CW: frequency + stereo spread
MORPH	Cluster scan
FUSE	CCW: chorus mix CW: oscillator noise-modulation
SEED	Cluster pitch offset randomisation + delay tap spacing
SCAN	Inter-oscillator ring-mod mix

ALGO
4 — 4 oscillator wavetable scanning with dungeon metallic delay/reverb


centre / up

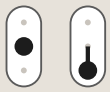
WARP	CCW: continuous oscillator bit depth reduction CW: inter-oscillator exponential frequency cross-mod
SPAN	CCW: frequency + waveform spread CW: frequency + stereo spread
MORPH	Wavetable scan
FUSE	CCW: filter bandpass morph with parallel sine oscillator CW: chorus mix and filter resonance + shape
SEED	Pitch and wave offset randomisation + delay tap spacing
SCAN	Base wavetable set randomisation

ALGO
5 — 4 oscillator wavetable scanning with dungeon metallic delay/reverb


centre / centre

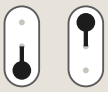
WARP	CCW: inter-oscillator phase modulation CW: inter-oscillator exponential frequency cross-mod
SPAN	CCW: frequency + waveform spread CW: frequency + stereo spread
MORPH	Wavetable scan
FUSE	CCW: chorus mix CW: chorus mix and filter resonance
SEED	Pitch and wave offset randomisation + delay tap spacing
SCAN	Base wavetable set randomisation

ALGO
6 — 4 oscillator wavetable scanning with reflekta diffuse delay structure


centre / down

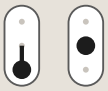
WARP	CCW: inter-oscillator phase modulation CW: inter-oscillator exponential frequency cross-mod
SPAN	CCW: frequency + waveform spread CW: frequency + stereo spread
MORPH	Wavetable scan
FUSE	CCW: oscillator to allpass + delay line audio rate modulation CW: individual oscillator wavefold amount
SEED	Pitch and wave offset randomisation + delay tap spacing
SCAN	Base wavetable set randomisation

ALGO 7 — 4 oscillator diatonic-quantised cluster scanning with reflekta diffuse delay structure



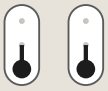
WARP	CCW: inter-oscillator phase modulation CW: inter-oscillator exponential frequency cross-mod
SPAN	Bipolar quantised cluster-frequency spread. CW introduces stereo spread
MORPH	Cluster scan
FUSE	CCW: stereo chorus mix CW: saturation mix and gain
SEED	Cluster pitch and wave offset randomisation + delay tap spacing
SCAN	Base wavetable set randomisation

ALGO 8 — 4 oscillator cluster scanning with dungeon metallic delay/reverb



WARP	CCW: inter-oscillator phase modulation CW: inter-oscillator exponential frequency cross-mod
SPAN	Bipolar cluster-frequency spread. CW introduces stereo spread
MORPH	Cluster scan
FUSE	CCW: stereo chorus mix CW: saturation mix and gain
SEED	Cluster pitch and wave offset randomisation + delay tap spacing
SCAN	Base wavetable set randomisation

ALGO 9 — 4 oscillator cluster scanning with reflekta diffuse delay structure



WARP	CCW: inter-oscillator phase modulation CW: inter-oscillator exponential frequency cross-mod
SPAN	Bipolar cluster-frequency spread. CW introduces stereo spread
MORPH	Cluster scan
FUSE	CCW: stereo chorus mix CW: saturation mix and gain
SEED	Cluster pitch and wave offset randomisation + delay tap spacing
SCAN	Base wavetable set randomisation

8 / Specifications

Size	24HP, 15mm depth below panel. Power header is side-entry with a cutout in the main PCB.
Current draw	+12V: 100mA / -12V: 10mA
Processing	Audio path and all processing runs at 96kHz. Audio inputs and outputs are 24-bit. CV inputs are 16-bit, scanned at 24kHz.
CV input	20Vpp signal/CV input voltage, full parameter range clipped in software. A 5V swing corresponds to the full parameter knob range. Input impedance 200kOhm.
Audio input	Clips at 20Vpp. Gain from -inf dB (silence) to +30dB. Input impedance 30kOhm.
Audio output	18Vpp full scale with volume control. Output impedance 1kOhm.
Protection	Reverse polarity protected. Both USB and eurorack power can be connected concurrently.

9 / Firmware, warranty, contact

Version check	Attach Vhikk X to a computer via USB and open HELP.TXT. The version is noted in the diagnostics box as "fw.ver:". Calibration, hold-to-change save mode and both-button randomisation all require v003 or above.
Updating	UF2 bootloader. The module mounts as a USB Mass Storage drive, and a firmware file is applied by dragging it onto that drive. Port location is on page 5.
Algorithms	Firmware 00000001, 00000002 and 00000003 all carry the same nine algorithms.
Warranty	Two years following the purchase date. Covers any defect in manufacture. Does not cover damage or malfunction from incorrect use, including but not limited to power cables connected incorrectly, excessive voltage levels, or exposure to extreme temperature or moisture. Covers replacement or repair, with shipping and applicability determined on contact.
Manufacturing	The Glasgow Synth Guild manufacture Vhikk X, with Signal Sounds handling international distribution.
Contact	contact@forge-tme.com

A note from the compiler

I love this module. It is enormously versatile and it rewards exploration more than almost anything else in my rack. But sometimes what you need is a clear, defined reference to coax it into behaving, and that is what this document is for.

If I have got something wrong here, or the firmware has moved on since the revision this was built from, please let me know and I will update the document.

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This document is an unofficial reorganisation of Forge-TME's own published Vhikk X guide and algorithm reference, compiled from the July 22 2026 revision of the web pages, together with the official annotated panel diagram. Switch positions were taken from the position graphics on the algorithm reference page. It is not endorsed by Forge-TME. The builder has stated that once the new firmware is released, an official PDF manual with diagrams, patch notes, FAQs and algorithm summaries will be compiled. Check the source pages for changes before relying on anything here.