QUANTARA

Complete User Manual

English / Español / Deutsch / Nederlands

V0.9.9.0.78

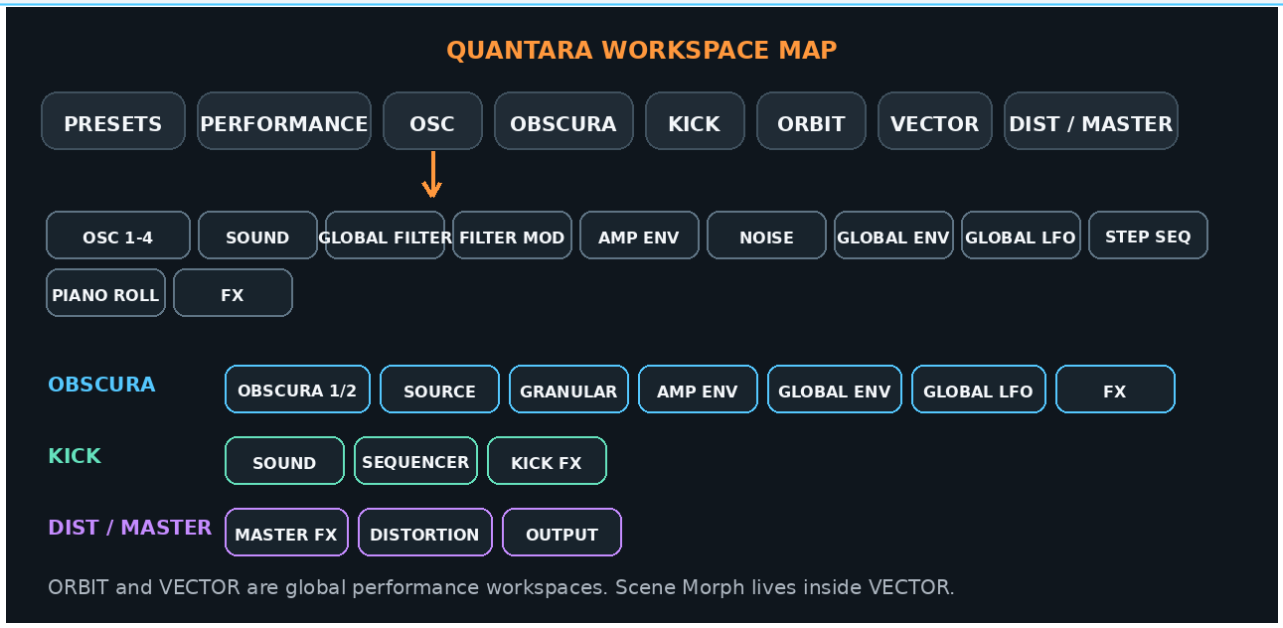
Windows x64 VST3 - Preset schema 25

Synth Design by LVG-73

Manual Scope / Alcance / Umfang / Reikwijdte

This edition documents the complete current QUANTARA architecture: the external-only wavetable system, eight independent FX racks with CHAIN routing, Master AMP ADSR, KICK engine, 371-destination modulation registry, ORBIT direction modes, clean INIT-first preset recall, SAVE SELECTED, VECTOR and Scene Morph.

This manual documents QUANTARA V0.9.9.0.78. UI labels are kept verbatim so the instructions can be followed directly inside the plug-in.



Workspace map - root pages and sub-pages.

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QUANTARA V0.9.9.0.78

UI labels are reproduced exactly as they appear in QUANTARA. Technical terms such as WT POS, ORBIT and CHAIN are therefore intentionally kept in English.

1. Getting started and workspace map

QUANTARA is a Windows x64 VST3 hybrid synthesizer built around four independent oscillator lanes, two OBSCURA spectral/granular engines, a dedicated synthesized KICK engine, global dual filters, five envelopes, five LFOs, ORBIT, VECTOR, Scene Morph and independent four-slot FX racks. This manual documents the V0.9.9.0.78 feature set and preset schema 25.

The plug-in opens at 1280 x 740 and can scale proportionally up to 2000 x 1157. The visible root navigation is PRESETS, PERFORMANCE, OSC, OBSCURA, KICK, ORBIT, VECTOR and DIST / MASTER. OSC, OBSCURA, KICK and DIST / MASTER contain their own sub-pages so the top bar stays compact.

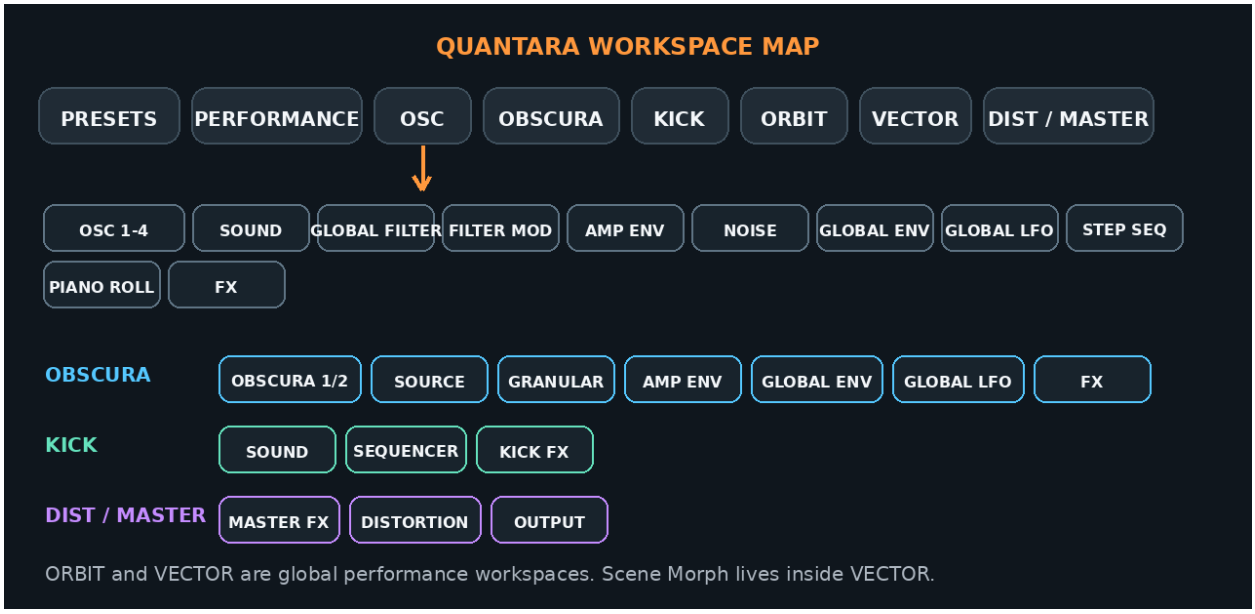
For a clean first test, load INIT, enable one oscillator, choose Saw or Square, keep optional FX and sequencers off, and play MIDI from the DAW. Then build the patch one module at a time.

Installation and fixed locations

VST3: C:\Program Files\Common Files\VST3\QUANTARA.vst3

Presets: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Presets

Wavetables: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Wavetables



2. Presets, INIT and content folders

The PRESETS page is a folder-driven TFT-style browser. Presets use the .qpreset extension and schema 25. The fixed preset root is inside the installed bundle: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Presets. Folder names become browser categories.

Every valid preset load is deliberately INIT-first. QUANTARA mutes the complete transition, applies the clean INIT state, restores the selected external wavetables and non-APVTS state, then restores the selected parameter state. This prevents settings, sequences, samples or modulation curves from the previously loaded sound from leaking into the new preset.

SAVE SELECTED overwrites the currently selected user .qpreset with the complete current state and does not reload it afterwards. INIT is virtual and cannot be overwritten. SAVE AS creates a new preset. IMPORT / LOAD can load a .qpreset from disk. Up/Down arrow keys load the previous or next visible preset when the preset browser has keyboard focus.

CONTROL	FUNCTION / USE
Preset browser	Folders on the left, presets on the right; click an item to load it.
SAVE SELECTED	Overwrite the exact selected user preset with the complete current state; INIT is protected.
SAVE AS	Create a new .qpreset under a new name/location.

CONTROL	FUNCTION / USE
IMPORT / LOAD	Load a .qpreset from disk using the INIT-first recall path.
REFRESH	Rescan the fixed preset library.
DELETE PRESET	Delete only the selected .qpreset; wavetables are not deleted.
OPEN PRESET FOLDER	Open the installed QUANTARA.vst3\Presets directory.

3. PERFORMANCE page

PERFORMANCE is the fastest way to reshape a sound without opening the deeper workspaces. The upper group exposes the main filter envelope and accent behaviour; the lower group contains circuit-style calibration and four performance macros.

The four macros are overlays: they influence several internal DSP blocks without rewriting the underlying base parameters. This makes them suitable for automation and live performance. ACID increases squelch/envelope interaction, DRIVE adds saturation and body, TENSION adds harmonic and filter movement, and SPACE increases width and wet FX contribution.

CONTROL	FUNCTION / USE
MASTER TUNE	Global tuning offset in cents.
CUTOFF / RESONANCE	Primary Filter 1 brightness and resonant peak.
ENV MOD / DECAY	Depth and decay of the main filter-envelope movement.
ACCENT	Global accent strength before its detailed routing.
CONDITION / VCF TRIM	Circuit-style character and fine filter calibration.
ACC DECAY / ACC STACK	Accent duration and accumulation behaviour.
SLIDE TIME	Portamento time for slide/legato transitions.
OUT ASYM	Controlled output asymmetry for additional harmonics.
ACID / DRIVE / TENSION / SPACE	Four non-destructive performance macros affecting multiple DSP blocks.

4. OSC workspace: sound, wavetable, tuning, AMP ENV and noise

OSC 1-4 are fully independent sound lanes. Choose the oscillator with OSC 1 / OSC 2 / OSC 3 / OSC 4, then choose a module: SOUND, GLOBAL FILTER, GLOBAL FILTER MOD, AMP ENV, NOISE, GLOBAL ENV, GLOBAL LFO, STEP SEQ, PIANO ROLL or FX.

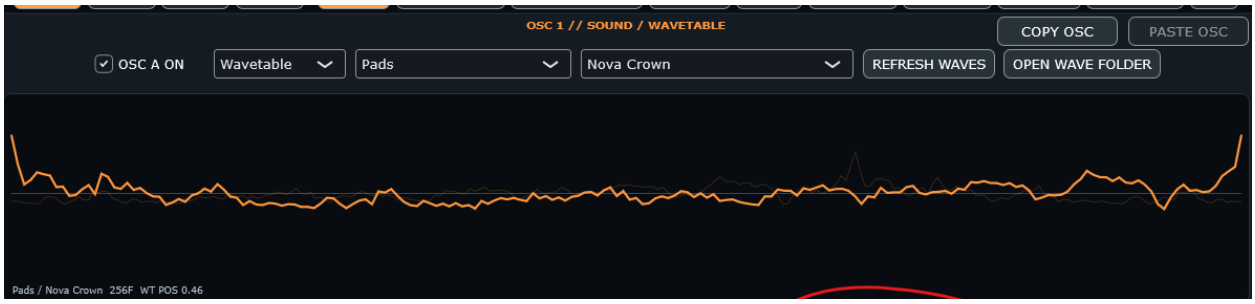
Classic Saw, Square, Sine and Triangle are generated internally. Wavetable audio is external-only. The browser scans QUANTARA.vst3\Wavetables recursively; the root is displayed as Factory Wave Tables and subfolder names appear directly as categories. WAV and WAVE files are accepted. Standard Serum-style tables use 2048 samples per frame and up to 256 frames; shorter or generic cycles can be converted to the internal 2048-sample frame format.

WT POS is the actual frame position used by DSP and the live waveform display. ENV/LFO, ORBIT and Scene Morph can move it without overwriting the stored base value. If Wavetable is selected but no external file is selected, the wavetable oscillator is intentionally silent rather than falling back to hidden content.

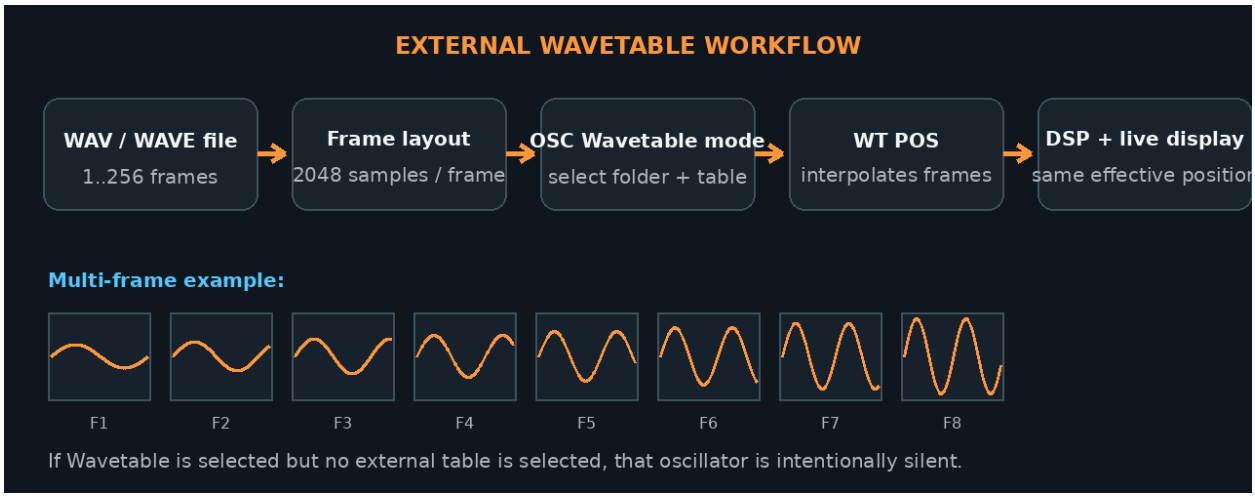
Each oscillator also owns a dedicated AMP ADSR with up to approximately 60 seconds Attack, Decay and Release, an independent octave/semitone/fine/tune path, optional unison, stereo spread, MIDI glide and a noise generator with eight noise colours.

CONTROL	FUNCTION / USE
OSC ON	Enable/mute the selected oscillator without losing its settings.
SOURCE	Saw, Square, Wavetable, Sine or Triangle.

CONTROL	FUNCTION / USE
CATEGORY / TABLE	Choose folder and external WAV/WAVE table.
REFRESH WAVES / OPEN WAVE FOLDER	Rescan or open the installed wavetable library.
LEVEL / SEMI / FINE / WT POS	Layer level, coarse/fine pitch and wavetable frame position.
OCTAVE / TUNE	Independent octave and tuning offset for this oscillator.
UNISON / DETUNE / SPREAD	0-12 added voices with controlled detune and stereo distribution.
MIDI GLIDE	Per-oscillator portamento for connected notes.
AMP ADSR	Per-oscillator VCA envelope; Attack/Decay/Release up to about 60 s.
NOISE	White, Pink, Brown, Blue, Violet, Digital, Crackle or Velvet plus Level/Color/Width.



OSC SOUND / WAVETABLE workspace - folder-driven external table selection and live waveform.



Wavetable format details

Item	Specification
Extensions	.wav / .wave
Native multi-frame layout	2048 samples per frame
Frames	1-256
Morph	WT POS interpolates between adjacent frames
Short cycles	Auto-converted/resampled to 2048 samples
Browser root	Factory Wave Tables
Recall	Relative path inside QUANTARA.vst3\Wavetables

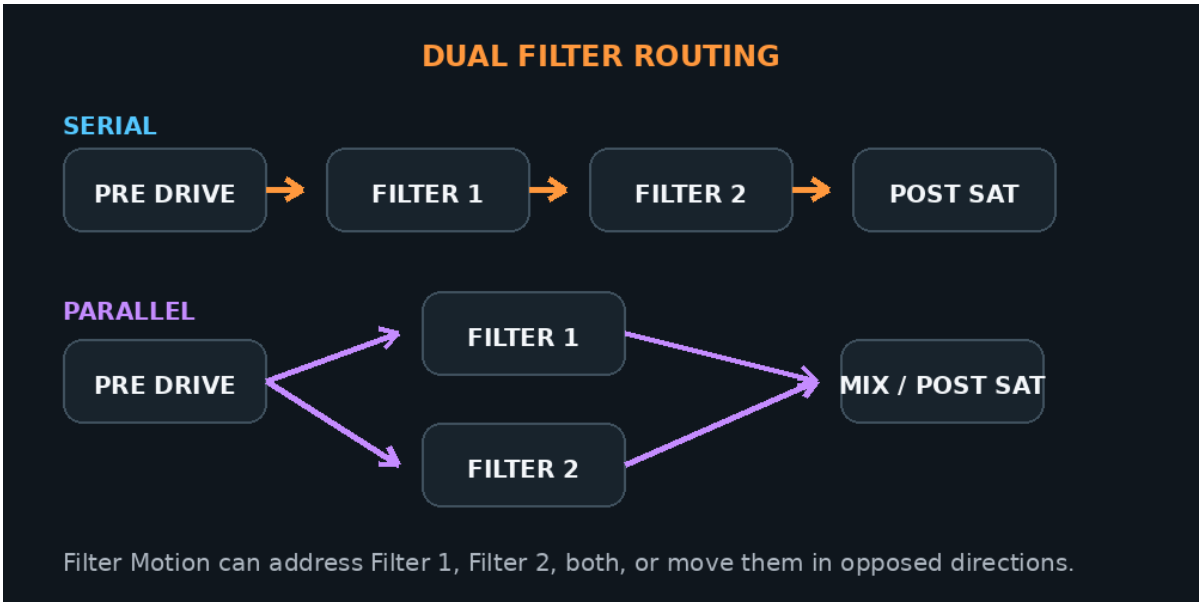
5. GLOBAL FILTER, FILTER MOD, ENV 1-5 and LFO 1-5

The filter architecture is intentionally global to the oscillator bus. Filter 1 can be bypassed and offers ten models. Filter 2 is optional and can be placed in SERIAL or PARALLEL relation to Filter 1. Pre Drive changes the harmonic material entering the filters; Low Body can restore controlled low-frequency weight at stronger resonance/drive settings; Post Filter Saturation adds additional density after filtering.

GLOBAL FILTER MOD contains a dedicated tempo-aware motion generator plus accent routing. Motion can target Filter 1, Filter 2, both together or both in opposed directions. Accent can be sent independently to cutoff, drive and VCA.

Five global envelopes and five global LFOs each provide four bipolar routes. The central modulation registry currently contains 371 safe real-time destinations, including oscillator tuning, WT POS, AMP envelope times, noise, filters, sequencer timing, OBSCURA, KICK, VECTOR, Scene Morph and every continuous A/B/C/D/MIX control in all FX racks. Discrete algorithm selectors and ON/OFF switches are deliberately excluded from high-rate modulation.

CONTROL	FUNCTION / USE
FILTER 1 ON / MODEL	True bypass plus 10 selectable filter models.
CUTOFF / RESONANCE	40-16000 Hz cutoff and resonance amount.
FILTER DRIVE / CHARACTER / KEY TRACK	Nonlinear drive, model character and pitch-following cutoff.
PRE DRIVE / LOW BODY	Pre-filter harmonics and low-frequency reinforcement.
FILTER 2	Optional second filter with independent model, cutoff, resonance, drive and mix.
ROUTING	SERIAL processes Filter 2 after Filter 1; PARALLEL processes both from the same pre-filter signal.
MOTION RATE / SHAPE / TARGET / DEPTH	Dedicated tempo-motion generator for one/both filters.
ACC > CUTOFF / DRIVE / VCA	Independent accent routing depths.
POST FILTER SAT	Post-filter saturation amount.



Filter models

Reactor Diode LP / 18dB LP / 24dB Ladder LP / High Pass / Band Pass / Notch / Morph LP/BP/HP / Resonator / Comb / Formant

Global modulation controls

CONTROL	FUNCTION / USE
ENV 1-5 ADSR	Attack/Decay/Sustain/Release, Curve and Retrigger.
ENV DRAW MODE	Paint a custom envelope, set Draw Time and optionally loop it.
LFO 1-5	Free 0.02-30 Hz or host-synced with 14 musical divisions.
LFO SHAPE	Sine, Triangle, Saw Up/Down, Square, S&H;, Smooth Random or DRAW.
ROUTE 1-4	Destination plus bipolar amount; negative values invert movement.
LIVE MOD FEEDBACK	Base value remains stored/automatable; the effective pointer shows modulation.

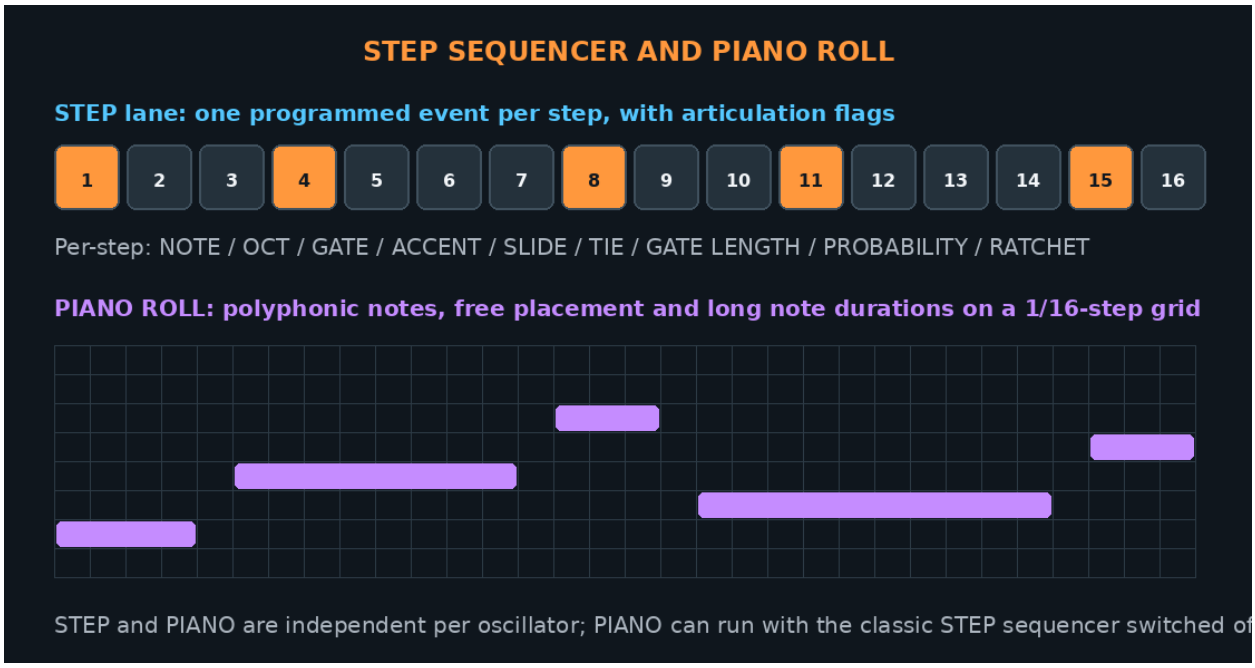
6. STEP sequencer and PIANO ROLL

Every oscillator has its own independent classic STEP sequencer and its own independent PIANO ROLL. STEP is a one-event-per-step lane with articulation; PIANO ROLL is polyphonic and supports multiple simultaneous notes and notes that extend across many steps. PIANO can run even when the classic STEP sequencer is switched off.

Each oscillator owns its own clock, host-sync state, tempo, division, pattern length, swing, transpose, play mode and slide time. Pattern lengths are 4, 8, 16, 32 or 64 steps. STEP editing includes note, octave, gate, accent, slide, tie, gate length, probability and ratchet. PIANO editing includes velocity, density, octave range and maximum generated note length.

The GENERATE function is key/scale aware and uses genre + role rules instead of randomising every step independently. Generated notes remain inside the selected key/scale. The generator includes 27 genre grammars, 10 scales/modes and 11 musical roles.

CONTROL	FUNCTION / USE
SEQ ON / PIANO ON	Classic STEP and PIANO lanes are independent runtime enables.
HOST SYNC / TEMPO	Follow DAW tempo or use 40-300 BPM internal clock.
DIVISION	1/4, 1/8, 1/16, 1/16T, 1/32 plus additional triplet divisions on OSC sequencers.
PATTERN LENGTH	4, 8, 16, 32 or 64 steps.
SWING / TRANSPOSE / PLAY MODE	Groove, global pattern transpose and Forward/Reverse/Fwd&Rev;/Invert/Random order.
STEP FLAGS	Gate, Accent, Slide, Tie, Gate Length, Probability and 1x-4x Ratchet.
PIANO GENERATOR	Density, octave range, max note length and velocity; manual notes can be stretched freely.
GENERATE	Creates and scores musical candidates from Key + Scale + Genre + Role.



Generator scales

NATURAL MINOR / MAJOR / DORIAN / PHRYGIAN / MIXOLYDIAN / HARMONIC MINOR / MELODIC MINOR / MINOR PENTATONIC / BLUES / CHROMATIC

Generator roles

AUTO / MONO CLASSIC / ANALOG BASS / ACID LINE / SEMI-MODULAR / ARPEGGIO / MELODIC LEAD / PLUCK / PAD MOTION / SYNTH BASS / POLYRHYTHM

Genre grammars

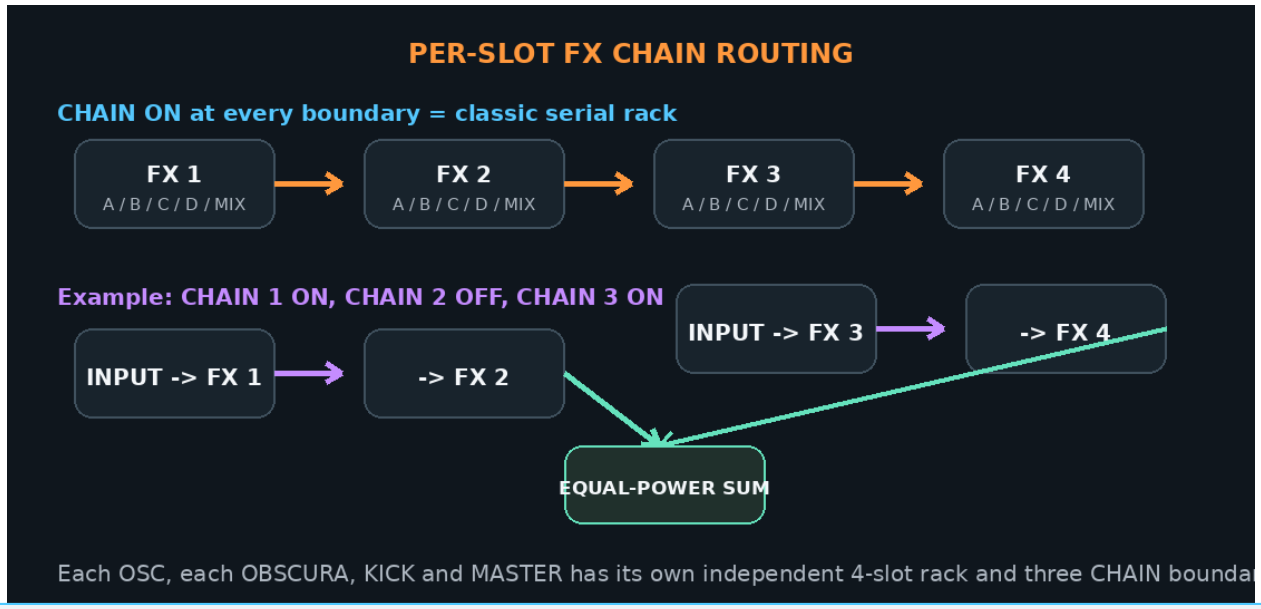
PEAK-TIME TECHNO / ACID TECHNO / HYPNOTIC TECHNO / TRANCE / HARD TECHNO / MELODIC TECHNO / PROGRESSIVE TRANCE / PSYTRANCE / HOUSE / DEEP HOUSE / TECH HOUSE / DISCO / NU-DISCO / EDM / PROG HOUSE / ELECTRO / SYNTHWAVE / POP / R&B; / FUNK / DRUM & BASS / BREAKBEAT / AMBIENT / HIP-HOP / TRAP / UK GARAGE / DUBSTEP / REGGAETON

7. Independent 4-slot FX racks and CHAIN routing

QUANTARA contains independent four-slot racks for OSC 1, OSC 2, OSC 3, OSC 4, OBSCURA 1, OBSCURA 2, KICK and MASTER. No rack shares its state with another rack.

Each slot has ON/OFF, an effect algorithm, four algorithm-specific parameters A/B/C/D and MIX. The labels change with the selected algorithm - for example Delay uses TIME / FEEDBACK / TONE / STEREO, while a Hall Reverb uses SIZE / DECAY / DAMP / WIDTH.

There are three CHAIN boundaries in every four-slot rack: FX1->2, FX2->3 and FX3->4. CHAIN ON feeds the processed output to the next slot. CHAIN OFF starts the downstream slot as a parallel branch from the rack input; active branches are combined with equal-power compensation. Startup and INIT default every CHAIN switch OFF, but a schema-25 preset recalls its own saved choices exactly.



The 36 current FX algorithms are listed in Appendix A. A/B/C/D labels change dynamically with the selected algorithm.

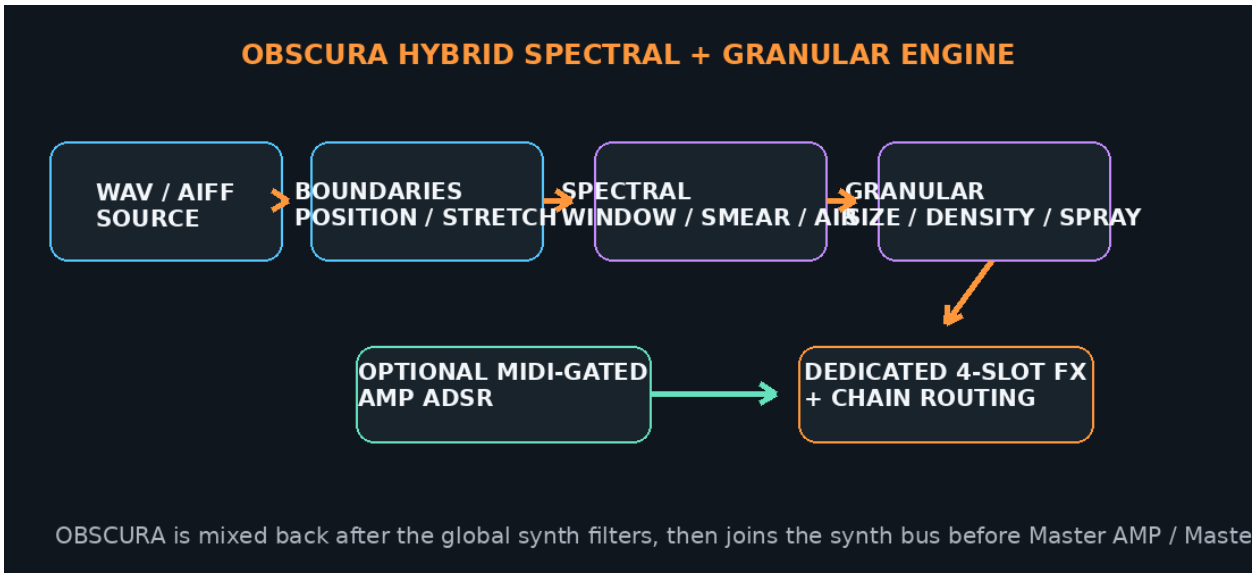
8. OBSCURA 1-2 hybrid spectral + granular engines

OBSCURA 1 and OBSCURA 2 are independent WAV/AIFF sample-manipulation engines. Their spectral engine and granular cloud can be used together. The source section provides Start/End, Loop Start/End, Position, Stretch, pitch, root note, key tracking, level, pan, width and source fade behaviour.

Spectral Stretch ranges from 0.25x to 1000x. Spectral controls include FFT Window, Overlap, Smear, Harmonics, Air, Freeze, Phase Lock and Ping-Pong. Granular controls include Grain Size, Density, Spray, Pitch Spread, Stereo Spread and Reverse Grains.

OBSCURA has a separate output AMP ADSR. MIDI GATE OFF preserves continuous texture playback; MIDI GATE ON makes the output envelope respond to note-on/note-off. Each OBSCURA engine has its own four-slot FX rack with the same CHAIN topology as the oscillator and master racks. OBSCURA returns are mixed after the global oscillator filters, so a closed synth filter does not silence a continuous OBSCURA texture.

CONTROL	FUNCTION / USE
LOAD WAV / AIFF	Load source audio into the selected OBSCURA engine.
START / END / LOOP START / LOOP END	Define playback and loop boundaries; waveform handles are fastest for editing.
POSITION / STRETCH	Scrub spectral position and stretch time from 0.25x to 1000x.
COARSE / FINE / ROOT / KEY TRACK	Pitch setup and MIDI-relative sample tuning.
LEVEL / PAN / WIDTH	Output level and stereo placement.
FREEZE / PHASE LOCK / PING-PONG	Freeze source frame, preserve more phase, or bounce the spectral scan.
WINDOW / OVERLAP / SMEAR / HARMONICS / AIR	Spectral resolution, smoothness, diffusion, generated harmonics and high-frequency air.
GRANULAR	Grain Size, Density, Spray, Pitch Spread, Stereo Spread and Reverse Grains.
AMP MIDI GATE + ADSR	Optional output VCA envelope; OFF preserves continuous textures.



9. KICK engine, sequencer and KICK FX

KICK is a dedicated synthesized one-shot engine, not a sample player. Twenty style profiles establish different synthesis grammars, including EDM, Rumble, Hardstyle, Hardcore, 808, Big Room, Techno, Industrial, Rawstyle, Gabber, Frenchcore, Trap 808 and Drum & Bass.

The sound controls shape pitch drop and pitch decay, body, punch, click, click tone, drive, character, sub, rumble, rumble decay, rumble tone and final kick level. TRIGGER auditions the current kick without sending or consuming MIDI.

The independent internal KICK sequencer supports 16, 32 or 64 steps, host sync or 40-300 BPM internal tempo, five divisions and swing. KICK also owns an independent four-slot FX rack. The KICK bus bypasses Master AMP and Master FX, joins after Master FX, and then passes through final Distortion and the Safety Limiter with the complete mix.

CONTROL	FUNCTION / USE
STYLE	20 synthesis profiles from EDM/808 to Hardstyle/Gabber/Frenchcore/Drum & Bass.
TUNE / PITCH DROP / PITCH DECAY	Fundamental tuning and downward pitch-envelope behaviour.
DECAY / PUNCH / BODY	Tail length, transient impact and low-mid body.
CLICK / CLICK TONE	Transient click amount and frequency.
DRIVE / CHARACTER / SUB	Nonlinear density, model character and sub reinforcement.
RUMBLE / DECAY / TONE	Dedicated low-frequency rumble component.
KICK SEQUENCER	16/32/64 steps, Host Sync, Tempo, Division and Swing.
KICK FX	Independent 4-slot rack with per-boundary CHAIN.

Kick styles

EDM / Rumble / Hardstyle / Hardcore / 808 / Big Room / Festival EDM / House / Tech House / Disco / Techno / Industrial / Rawstyle / Gabber / Frenchcore / Uptempo / 808 Distorted / Trap 808 / Drum & Bass / Electro

10. ORBIT motion engine

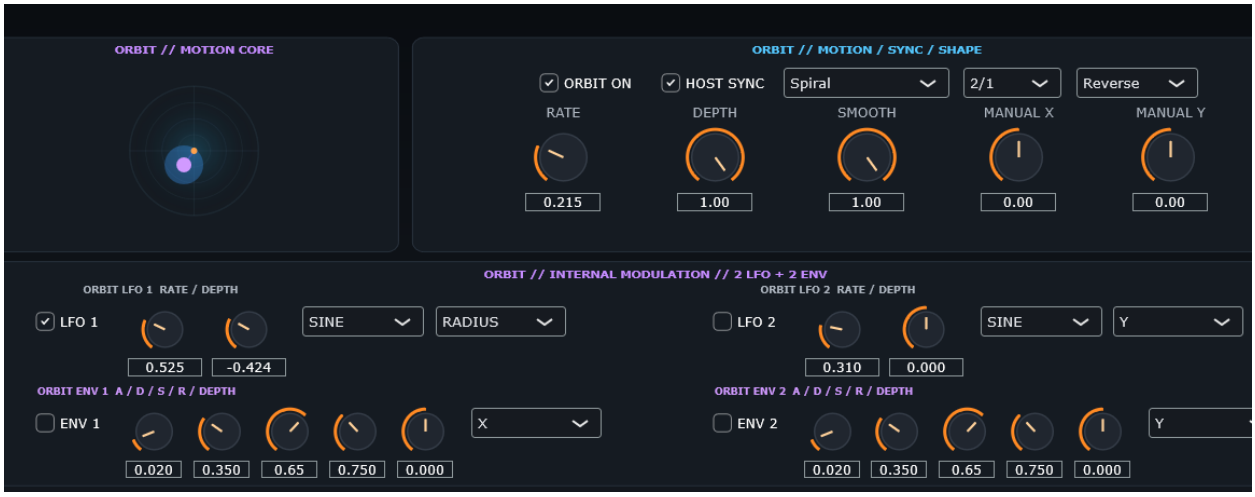
ORBIT is a global multi-axis performance modulator designed for evolving movement. Motion modes are Manual, Circle, Ellipse, Spiral, Figure-8 and Pendulum. Timing can be free-running or host-synchronised. Direction modes are Forward, Reverse, Ping-Pong, Alternate Cycle, Random / Cycle and Random / Note.

ORBIT produces five route sources: X, Y, RADIUS, ANGLE and SPEED. Eight routes can each choose one source, one destination, a bipolar Amount and a Min/Max window. Because ORBIT uses the central

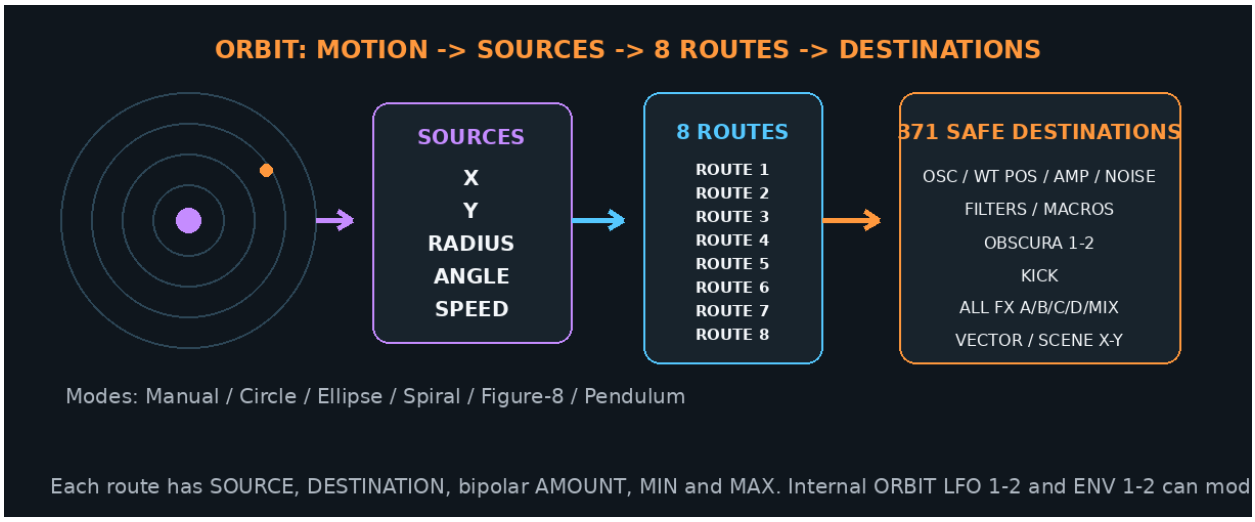
destination registry, it can move oscillator WT POS, filters, OBSCURA, KICK, FX A/B/C/D/MIX, VECTOR and Scene Morph coordinates.

Two internal ORBIT LFOs and two internal ORBIT ADSR envelopes can modulate X, Y, RADIUS or ANGLE before the eight routes are evaluated. The GUI keeps the host/preset base value intact: the cyan marker represents the stored base value while the orange pointer shows the effective modulated DSP value.

CONTROL	FUNCTION / USE
ORBIT ON / MOTION	Enable ORBIT and choose Manual/Circle/Ellipse/Spiral/Figure-8/Pendulum.
HOST SYNC / RATE / DIVISION	Free speed or DAW-synchronised musical division.
DIRECTION	Forward, Reverse, Ping-Pong, Alternate Cycle, Random/Cycle or Random/Note.
DEPTH / SMOOTH / MANUAL X/Y	Overall motion depth, smoothing and manual coordinates.
SOURCE	Each route reads X, Y, RADIUS, ANGLE or SPEED.
DESTINATION / AMOUNT / MIN / MAX	Target, bipolar depth and constrained output range for each of 8 routes.
ORBIT LFO 1-2	Internal LFOs can modulate X/Y/RADIUS/ANGLE.
ORBIT ENV 1-2	Internal ADSRs can modulate X/Y/RADIUS/ANGLE.



ORBIT workspace - motion core and two internal LFO + two ENV modulators.



11. VECTOR mixer and SCENE MORPH A/B/C/D

VECTOR is a four-corner mixer for OSC 1-4 only. A = OSC 1 (top-left), B = OSC 2 (top-right), C = OSC 3 (bottom-left) and D = OSC 4 (bottom-right). BILINEAR and EQUAL POWER laws are available, together with Curve and Smoothing. ORBIT can be injected into VECTOR X and Y through the dedicated ORBIT > X and ORBIT > Y controls.

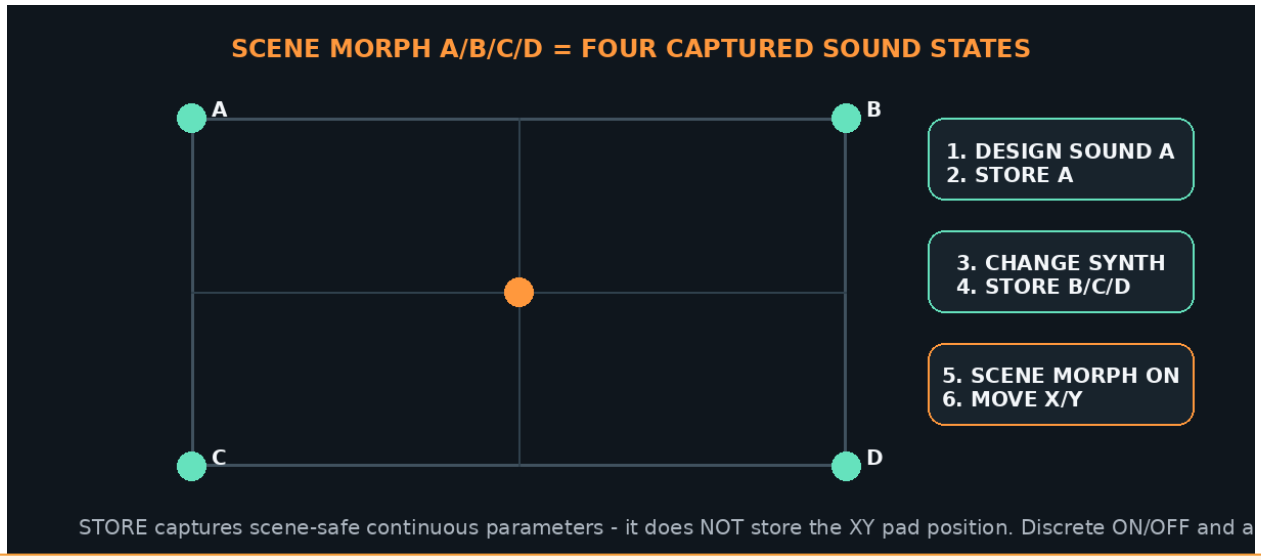
SCENE MORPH is a separate four-state snapshot system in the same workspace. STORE A/B/C/D captures the current scene-safe continuous QUANTARA parameters. It does not store the pad position. The correct workflow is: design sound A -> STORE A; change the synth to a genuinely different state -> STORE B; repeat for C and D; enable SCENE MORPH; then move Scene X/Y between the four corners.

Only safe continuous parameters are interpolated. Discrete choices such as FX type, waveform choice and ON/OFF switches stay on their base state to avoid unsafe mid-morph algorithm changes. The modulation order is BASE -> SCENE MORPH -> ENV/LFO -> ORBIT. Scene X and Scene Y are themselves modulation destinations, so ORBIT can automatically travel through the stored scenes.

CONTROL	FUNCTION / USE
VECTOR ON	Enable four-OSC XY mixing.
VECTOR LAW	BILINEAR or EQUAL POWER crossfade law.
VECTOR X / Y	Manual location inside the OSC1-4 mix field.
CURVE / SMOOTH	Crossfade contour and movement smoothing.
ORBIT > X / Y	Inject ORBIT motion into the VECTOR axes.
STORE A/B/C/D	Capture current scene-safe continuous parameters into four snapshots.
SCENE MORPH ON / X / Y / SMOOTH	Enable and navigate the four stored sound states.
CLEAR SCENES	Clear captured scenes without changing the current base sound.



VECTOR + Scene Morph workspace. The top bars/version are cropped so the control layout remains the focus.



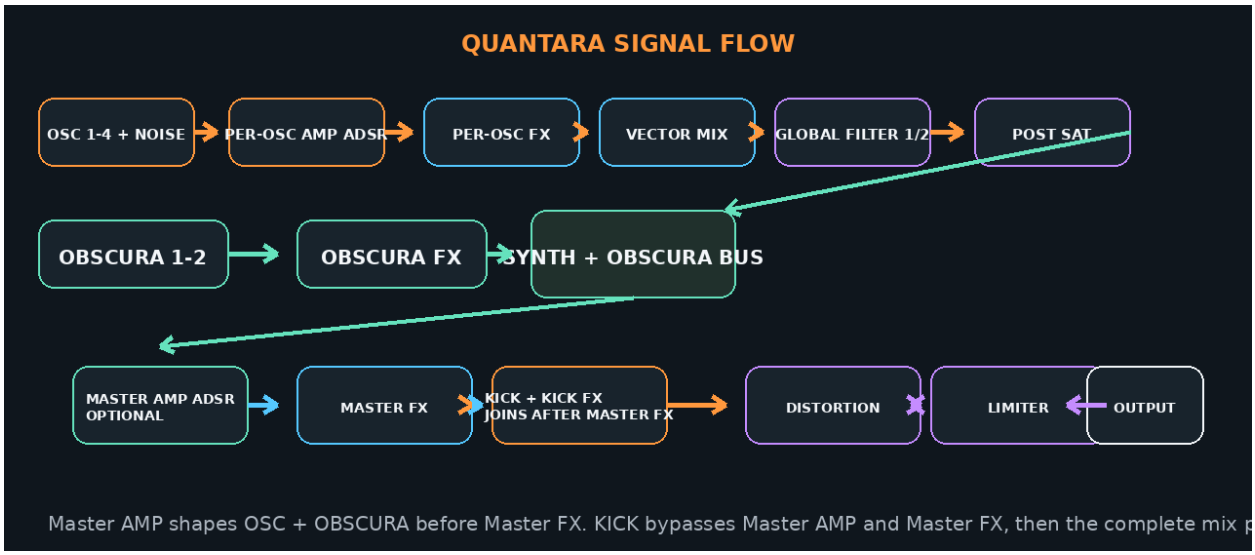
Important: STORE A/B/C/D captures sound-state parameters, not the XY position. Moving the Scene pad before storing does not create a different scene unless the synth parameters themselves are different.

12. MASTER FX, Master AMP ADSR, Distortion and output

The DIST / MASTER workspace contains MASTER FX, DISTORTION and OUTPUT sub-pages. The optional Master AMP ADSR shapes the combined OSC + OBSCURA synth bus before Master FX. It is note-count aware: the first held note starts Attack and the final note-off starts Release. Because it sits before Master FX, reverb and delay tails can continue naturally after the envelope closes.

The KICK bus remains independent from Master AMP and Master FX. After Master FX, KICK is mixed in, then the complete signal enters the global Distortion section. Ten distortion modes are available: Clean, Warm, Tube, Diode, Acid Clip, Fold, Fuzz, Transistor, Rectifier and Hard Clip. The final stage contains Output gain, Eco/Normal/High quality selection and an optional Safety Limiter.

CONTROL	FUNCTION / USE
MASTER AMP ENV	Optional note-count-aware ADSR on OSC+OBSCURA before Master FX.
MASTER FX	Independent 4-slot rack with CHAIN routing.
DISTORTION ON / TYPE	Bypass or select one of 10 distortion/saturation algorithms.
DRIVE / TONE / MIX / LEVEL	Amount, spectral colour, dry/wet and post-distortion trim.
OUTPUT	Final level from -24 dB to +6 dB.
QUALITY	Eco, Normal or High processing quality.
SAFETY LIMITER	Optional final peak protection.



Distortion modes

Clean / Warm / Tube / Diode / Acid Clip / Fold / Fuzz / Transistor / Rectifier / Hard Clip

13. MIDI, automation and live visual feedback

MIDI Pitch Bend is global at +/-2 semitones for OSC 1-4 and Piano Roll voices. Mod Wheel CC1 adds performance vibrato at approximately 5.5 Hz with up to +/-50 cents depth. Reset All Controllers returns both to neutral. These hardware wheel states are performance-only and do not overwrite preset/APVTS values.

Most continuous controls are host-automatable. ENV/LFO, ORBIT and Scene Morph apply overlays to base parameters rather than destructively rewriting them. This separation is important: a preset or DAW automation lane keeps the base value, while the live effective value can move around it.

14. Troubleshooting, CPU and safe workflow

No sound from a Wavetable source usually means the oscillator is in Wavetable mode but no valid external WAV/WAVE is selected. Open the installed Wavetables folder, place the file there, press REFRESH WAVES and select it again. Presets store paths relative to the Wavetables root and attempt strict relocation inside that library.

For high CPU use, first reduce oscillator unison, OBSCURA overlap/granular density, long reverbs and the number of active FX. Switch Quality from High to Normal or Eco while designing, then return to High for final rendering if required.

For preset problems, use INIT to verify the engine from a neutral state. A valid preset load always resets to INIT first and is muted during reconstruction, so a preset that fails because a required wavetable is missing will leave QUANTARA clean rather than retaining part of the previous sound.

Symptom	Likely cause / action
No sound in Wavetable	Select a valid external WAV/WAVE or switch to Saw/Square/Sine/Triangle.
Preset fails to recall	Check required external wavetable path; QUANTARA remains on clean INIT on failure.
Too much CPU	Reduce unison, OBSCURA overlap/density, active FX, long reverbs; lower Quality.
Unexpected FX routing	Check CHAIN 1->2 / 2->3 / 3->4; OFF starts a parallel branch.
Scene Morph seems inactive	Capture genuinely different synth states into A/B/C/D, then enable Scene Morph.
ORBIT moves sound but knob base value stays	Normal: base/automation remains static while live pointer shows effective modulation.

15. Practical sound-design recipes

Cinematic motion: start with two contrasting external wavetables on OSC 1 and OSC 3, slow AMP releases, moderate Filter resonance and one long reverb in a parallel FX branch. Route ORBIT RADIUS to Filter 1 Cutoff, SPEED to OSC 1 WT POS and ANGLE to a reverb parameter. Keep Min/Max narrow at first, then widen only the routes that need more motion.

Modern bass: use one oscillator for the fundamental, a second one one octave or fifth above, moderate unison, Filter 1 low-pass with drive, and a short AMP envelope. Add a parallel distortion branch in the oscillator rack so the clean low end remains intact. Use a small amount of Mod Wheel vibrato for performance.

Scene Morph pad: capture A with dark filter/low WT POS, B with a brighter table position and more width, C with more reverb and slower envelope, D with a tighter/drier state. Turn Scene Morph ON and automate Scene X/Y or route ORBIT to Scene X/Y for long-form evolution.

QUANTARA V0.9.9.0.78

Las etiquetas de la interfaz se reproducen exactamente como aparecen en QUANTARA. Por eso términos técnicos como WT POS, ORBIT y CHAIN se mantienen intencionadamente en inglés.

1. Primeros pasos y mapa de espacios de trabajo

QUANTARA es un sintetizador híbrido VST3 para Windows x64 basado en cuatro rutas de oscilador independientes, dos motores espectrales/granulares OBSCURA, un motor KICK sintetizado dedicado, filtros globales dobles, cinco envolventes, cinco LFO, ORBIT, VECTOR, Scene Morph y racks FX independientes de cuatro slots. Este manual documenta el conjunto de funciones V0.9.9.0.78 y el esquema de preset 25.

El plug-in se abre a 1280 x 740 y puede escalar proporcionalmente hasta 2000 x 1157. La navegación raíz visible es PRESETS, PERFORMANCE, OSC, OBSCURA, KICK, ORBIT, VECTOR y DIST / MASTER. OSC, OBSCURA, KICK y DIST / MASTER contienen sus propias subpáginas para mantener compacta la barra superior.

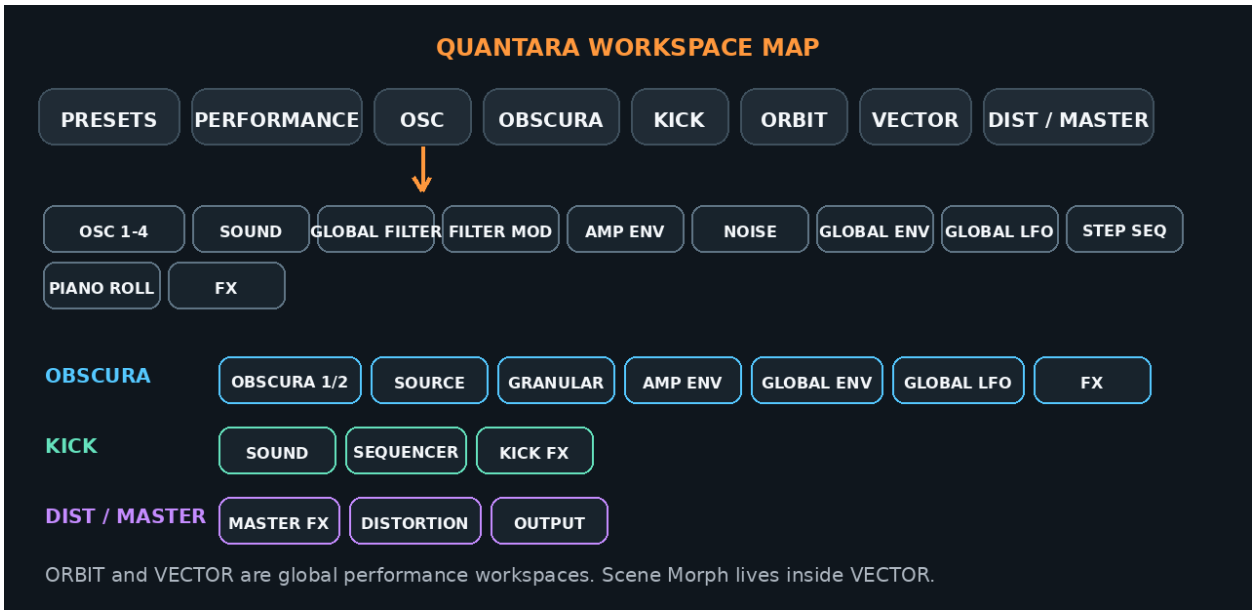
Para una primera prueba limpia, carga INIT, activa un solo oscilador, elige Saw o Square, deja los FX opcionales y los secuenciadores apagados y toca MIDI desde el DAW. Después construye el patch módulo por módulo.

Instalación y ubicaciones fijas

VST3: C:\Program Files\Common Files\VST3\QUANTARA.vst3

Presets: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Presets

Wavetables: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Wavetables



2. Presets, INIT y carpetas de contenido

La página PRESETS es un navegador estilo TFT basado en carpetas. Los presets usan la extensión .qpreset y el esquema 25. La raíz fija está dentro del bundle instalado: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Presets. Los nombres de carpetas se convierten en categorías del navegador.

Cada carga válida de preset es intencionadamente INIT-first. QUANTARA silencia toda la transición, aplica el estado INIT limpio, restaura las wavetables externas y el estado no-APVTS, y finalmente restaura el estado de parámetros seleccionado. Así no quedan ajustes, secuencias, samples ni curvas de modulación del sonido anterior.

SAVE SELECTED sobrescribe el .qpreset de usuario seleccionado con el estado completo actual y no lo recarga después. INIT es virtual y no puede sobrescribirse. SAVE AS crea un preset nuevo. IMPORT / LOAD carga un .qpreset desde disco. Con el navegador enfocado, las flechas Arriba/Abajo cargan el preset visible anterior o siguiente.

CONTROL	FUNCIÓN / USO
Preset browser	Carpetas a la izquierda, presets a la derecha; haz clic para cargar.

CONTROL	FUNCIÓN / USO
SAVE SELECTED	Sobrescribe el preset de usuario seleccionado con el estado completo; INIT está protegido.
SAVE AS	Crea un nuevo .qpreset con otro nombre/ubicación.
IMPORT / LOAD	Carga un .qpreset usando la ruta INIT-first.
REFRESH	Vuelve a escanear la biblioteca fija.
DELETE PRESET	Elimina solo el .qpreset seleccionado; no borra wavetables.
OPEN PRESET FOLDER	Abre QUANTARA.vst3\Presets.

3. Página PERFORMANCE

PERFORMANCE es la forma más rápida de remodelar un sonido sin abrir los espacios de trabajo profundos. El grupo superior expone el comportamiento principal del filtro, envolvente y acento; el inferior contiene calibración de tipo circuito y cuatro macros de interpretación.

Las cuatro macros funcionan como capas de control: influyen en varios bloques DSP sin reescribir los parámetros base. ACID aumenta squelch e interacción de envolvente/acento, DRIVE añade saturación y cuerpo, TENSION aumenta movimiento y tensión armónica, y SPACE incrementa anchura y contribución wet de los FX.

CONTROL	FUNCIÓN / USO
MASTER TUNE	Afinación global en cents.
CUTOFF / RESONANCE	Brillo de Filter 1 y pico de resonancia.
ENV MOD / DECAY	Profundidad y decay del movimiento de la envolvente del filtro.
ACCENT	Fuerza global del acento antes del routing detallado.
CONDITION / VCF TRIM	Carácter tipo circuito y calibración fina del filtro.
ACC DECAY / ACC STACK	Duración y acumulación del acento.
SLIDE TIME	Tiempo de portamento para slide/legato.
OUT ASYM	Asimetría controlada para armónicos extra.
ACID / DRIVE / TENSION / SPACE	Cuatro macros no destructivas que afectan varios bloques DSP.

4. Espacio OSC: sonido, wavetable, afinación, AMP ENV y ruido

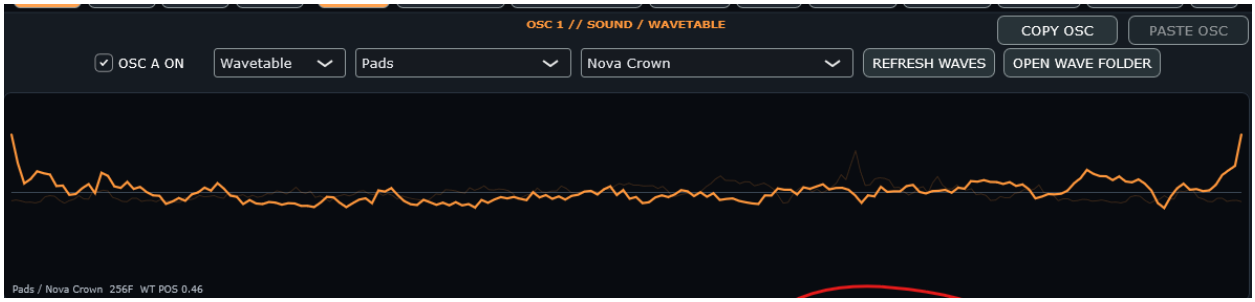
OSC 1-4 son rutas de sonido totalmente independientes. Selecciona OSC 1 / OSC 2 / OSC 3 / OSC 4 y después el módulo: SOUND, GLOBAL FILTER, GLOBAL FILTER MOD, AMP ENV, NOISE, GLOBAL ENV, GLOBAL LFO, STEP SEQ, PIANO ROLL o FX.

Saw, Square, Sine y Triangle se generan internamente. El audio wavetable es exclusivamente externo. El navegador escanea recursivamente QUANTARA.vst3\Wavetables; la raíz aparece como Factory Wave Tables y las subcarpetas se muestran directamente como categorías. Se aceptan WAV y WAVE. Las tablas estándar tipo Serum usan 2048 muestras por frame y hasta 256 frames; ciclos cortos o genéricos pueden convertirse al formato interno de 2048 muestras.

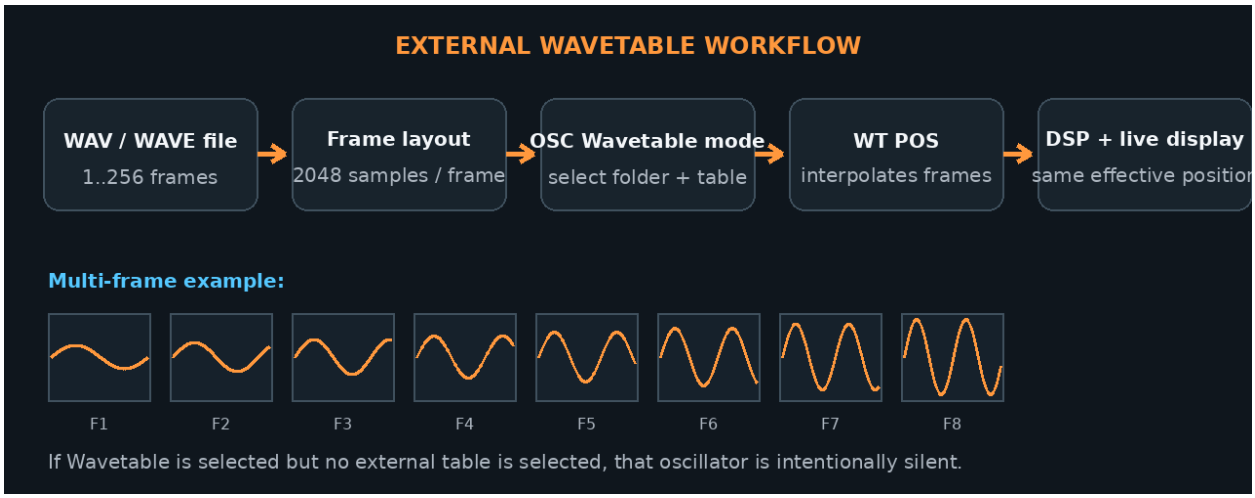
WT POS es la posición real de frame usada por el DSP y por la visualización de onda. ENV/LFO, ORBIT y Scene Morph pueden moverla sin sobrescribir el valor base guardado. Si se selecciona Wavetable pero no hay archivo externo válido, el oscilador queda deliberadamente en silencio en lugar de usar contenido oculto.

Cada oscilador posee además un AMP ADSR dedicado con Attack, Decay y Release de hasta aproximadamente 60 segundos, afinación independiente por octava/semitono/fine/tune, unison opcional, stereo spread, MIDI glide y un generador de ruido con ocho colores.

CONTROL	FUNCIÓN / USO
OSC ON	Activa/silencia el oscilador sin perder ajustes.
SOURCE	Saw, Square, Wavetable, Sine o Triangle.
CATEGORY / TABLE	Elige carpeta y tabla WAV/WAVE externa.
REFRESH WAVES / OPEN WAVE FOLDER	Reescanea o abre la biblioteca instalada.
LEVEL / SEMI / FINE / WT POS	Nivel, pitch grueso/fino y posición de frame.
OCTAVE / TUNE	Octava y afinación independientes.
UNISON / DETUNE / SPREAD	0-12 voces extra con detune y distribución estéreo.
MIDI GLIDE	Portamento por oscilador para notas ligadas.
AMP ADSR	Envolvente VCA por oscilador; Attack/Decay/Release hasta ~60 s.
NOISE	White, Pink, Brown, Blue, Violet, Digital, Crackle o Velvet con Level/Color/Width.



Workspace OSC SOUND / WAVETABLE - selección externa por carpetas y forma de onda en vivo.



Detalles del formato wavetable

Item	Specification
Extensions	.wav / .wave
Native multi-frame layout	2048 samples per frame
Frames	1-256
Morph	WT POS interpolates between adjacent frames
Short cycles	Auto-converted/resampled to 2048 samples
Browser root	Factory Wave Tables
Recall	Relative path inside QUANTARA.vst3\Wavetables

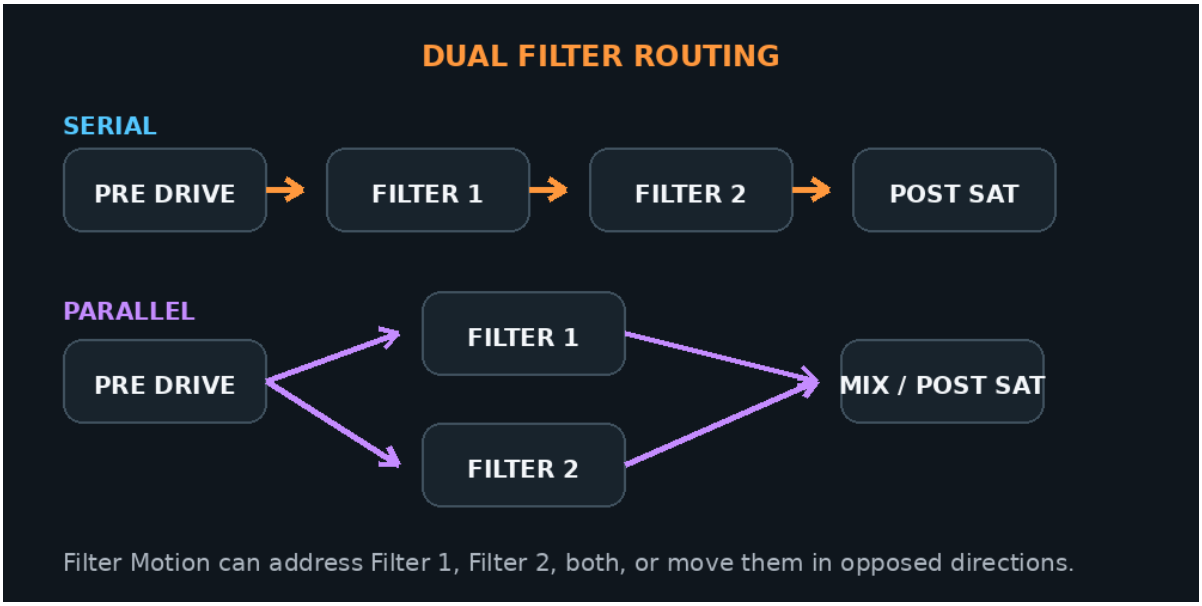
5. GLOBAL FILTER, FILTER MOD, ENV 1-5 y LFO 1-5

La arquitectura de filtros es global para el bus de osciladores. Filter 1 puede bypassarse y ofrece diez modelos. Filter 2 es opcional y puede relacionarse con Filter 1 en SERIAL o PARALLEL. Pre Drive modifica el contenido armónico que entra en los filtros; Low Body recupera peso grave controlado con más resonancia/drive; Post Filter Saturation añade densidad después del filtrado.

GLOBAL FILTER MOD contiene un generador de movimiento sincronizable al tempo y routing de acento. El movimiento puede actuar sobre Filter 1, Filter 2, ambos juntos o ambos en direcciones opuestas. El acento puede enviarse por separado a cutoff, drive y VCA.

Cinco envolventes globales y cinco LFO globales disponen cada uno de cuatro rutas bipolares. El registro central contiene actualmente 371 destinos seguros en tiempo real, incluidos tuning de osciladores, WT POS, tiempos AMP, ruido, filtros, timing de secuenciador, OBSCURA, KICK, VECTOR, Scene Morph y todos los controles continuos A/B/C/D/MIX de los racks FX. Los selectores discretos y ON/OFF quedan excluidos de la modulación rápida.

CONTROL	FUNCIÓN / USO
FILTER 1 ON / MODEL	Bypass real y 10 modelos seleccionables.
CUTOFF / RESONANCE	Cutoff 40-16000 Hz y resonancia.
FILTER DRIVE / CHARACTER / KEY TRACK	Drive no lineal, carácter y seguimiento de pitch.
PRE DRIVE / LOW BODY	Armónicos pre-filtro y refuerzo de graves.
FILTER 2	Segundo filtro opcional con model/cutoff/resonance/drive/mix.
ROUTING	SERIAL pone Filter 2 después de Filter 1; PARALLEL procesa ambos desde la misma entrada.
MOTION RATE / SHAPE / TARGET / DEPTH	Generador de movimiento dedicado para uno/ambos filtros.
ACC > CUTOFF / DRIVE / VCA	Profundidades independientes de routing del acento.
POST FILTER SAT	Saturación posterior al filtro.



Modelos de filtro

Reactor Diode LP / 18dB LP / 24dB Ladder LP / High Pass / Band Pass / Notch / Morph LP/BP/HP / Resonator / Comb / Formant

Controles de modulación global

CONTROL	FUNCIÓN / USO
ENV 1-5 ADSR	Attack/Decay/Sustain/Release, Curve y Retrigger.
ENV DRAW MODE	Dibuja una envolvente, ajusta Draw Time y opcionalmente loop.
LFO 1-5	Libre 0.02-30 Hz o sincronizado con 14 divisiones.
LFO SHAPE	Sine, Triangle, Saw Up/Down, Square, S&H;, Smooth Random o DRAW.
ROUTE 1-4	Destino + amount bipolar; valores negativos invierten movimiento.
LIVE MOD FEEDBACK	La base sigue guardada/automatizable; el puntero efectivo muestra la modulación.

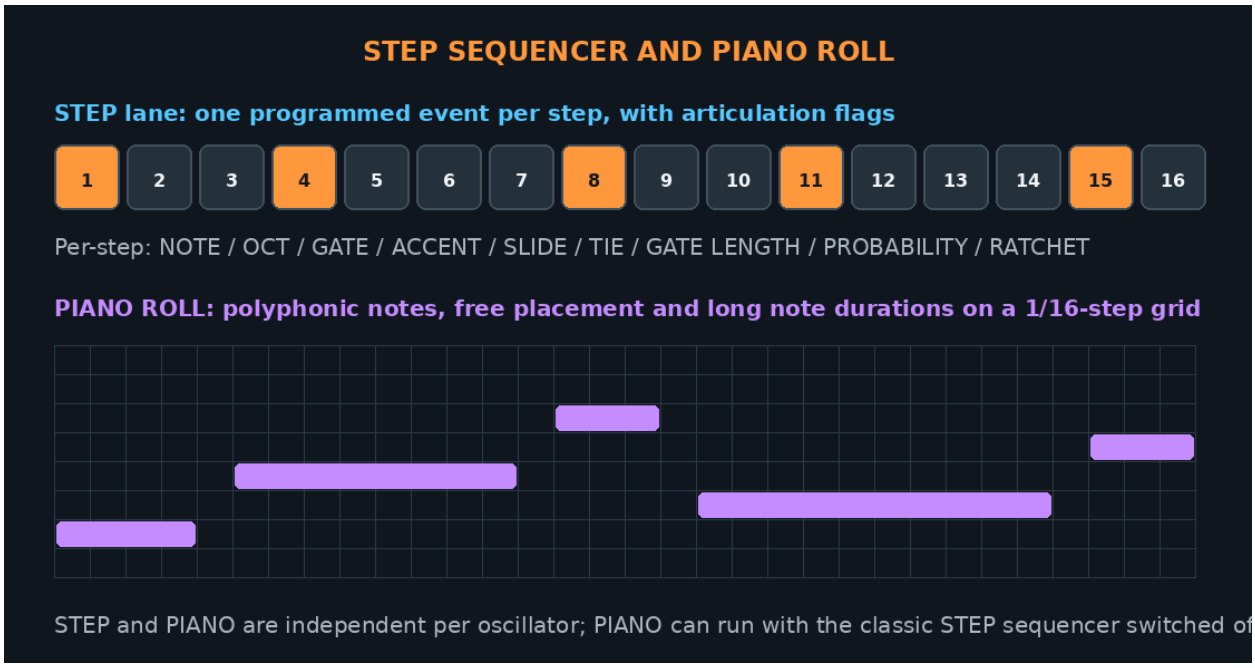
6. Secuenciador STEP y PIANO ROLL

Cada oscilador tiene su propio secuenciador STEP clásico y su propio PIANO ROLL independiente. STEP es una ruta de un evento por paso con articulación; PIANO ROLL es polifónico y admite varias notas simultáneas y notas que duran muchos pasos. PIANO puede funcionar incluso con el secuenciador STEP clásico apagado.

Cada oscilador posee reloj, host-sync, tempo, división, longitud de patrón, swing, transpose, play mode y slide time propios. Las longitudes son 4, 8, 16, 32 o 64 pasos. STEP incluye note, octave, gate, accent, slide, tie, gate length, probability y ratchet. PIANO incluye velocity, density, octave range y duración máxima generada.

GENERATE conoce tonalidad y escala y usa reglas de género + rol en lugar de aleatorizar cada paso. Las notas generadas permanecen dentro de la tonalidad/escala seleccionada. Incluye 27 gramáticas de género, 10 escalas/modos y 11 roles musicales.

CONTROL	FUNCIÓN / USO
SEQ ON / PIANO ON	STEP clásico y PIANO tienen activación independiente.
HOST SYNC / TEMPO	Sigue el DAW o usa reloj interno 40-300 BPM.
DIVISION	Divisiones rectas y triplet.
PATTERN LENGTH	4, 8, 16, 32 o 64 pasos.
SWING / TRANSPOSE / PLAY MODE	Groove, transpose y orden de reproducción.
STEP FLAGS	Gate, Accent, Slide, Tie, Gate Length, Probability y Ratchet 1x-4x.
PIANO GENERATOR	Density, rango de octava, longitud máxima y velocity.
GENERATE	Crea y puntúa candidatos con Key + Scale + Genre + Role.



Escalas del generador

NATURAL MINOR / MAJOR / DORIAN / PHRYGIAN / MIXOLYDIAN / HARMONIC MINOR / MELODIC MINOR / MINOR PENTATONIC / BLUES / CHROMATIC

Roles del generador

AUTO / MONO CLASSIC / ANALOG BASS / ACID LINE / SEMI-MODULAR / ARPEGGIO / MELODIC LEAD / PLUCK / PAD MOTION / SYNTH BASS / POLYRHYTHM

Gramáticas de género

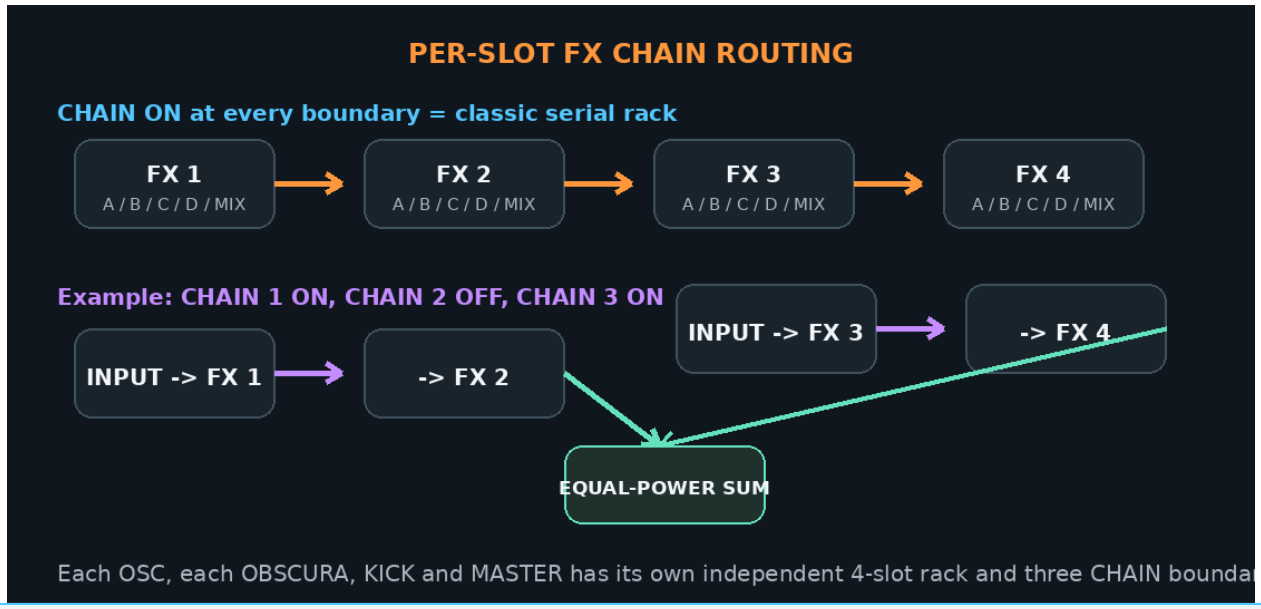
PEAK-TIME TECHNO / ACID TECHNO / HYPNOTIC TECHNO / TRANCE / HARD TECHNO / MELODIC TECHNO / PROGRESSIVE TRANCE / PSYTRANCE / HOUSE / DEEP HOUSE / TECH HOUSE / DISCO / NU-DISCO / EDM / PROG HOUSE / ELECTRO / SYNTHWAVE / POP / R&B; / FUNK / DRUM & BASS / BREAKBEAT / AMBIENT / HIP-HOP / TRAP / UK GARAGE / DUBSTEP / REGGAETON

7. Racks FX independientes de 4 slots y routing CHAIN

QUANTARA contiene racks independientes de cuatro slots para OSC 1, OSC 2, OSC 3, OSC 4, OBSCURA 1, OBSCURA 2, KICK y MASTER. Ningún rack comparte estado con otro.

Cada slot tiene ON/OFF, algoritmo, cuatro parámetros A/B/C/D dependientes del algoritmo y MIX. Las etiquetas cambian con el efecto seleccionado: un Delay usa TIME / FEEDBACK / TONE / STEREO y una Hall Reverb usa SIZE / DECAY / DAMP / WIDTH.

Cada rack tiene tres límites CHAIN: FX1->2, FX2->3 y FX3->4. CHAIN ON envía la salida procesada al siguiente slot. CHAIN OFF inicia el slot posterior como rama paralela desde la entrada del rack; las ramas activas se suman con compensación equal-power. Inicio e INIT dejan todos los CHAIN apagados, pero un preset esquema 25 recupera exactamente sus propias elecciones.



Los 36 algoritmos FX actuales aparecen en el Apéndice A. Las etiquetas A/B/C/D cambian dinámicamente.

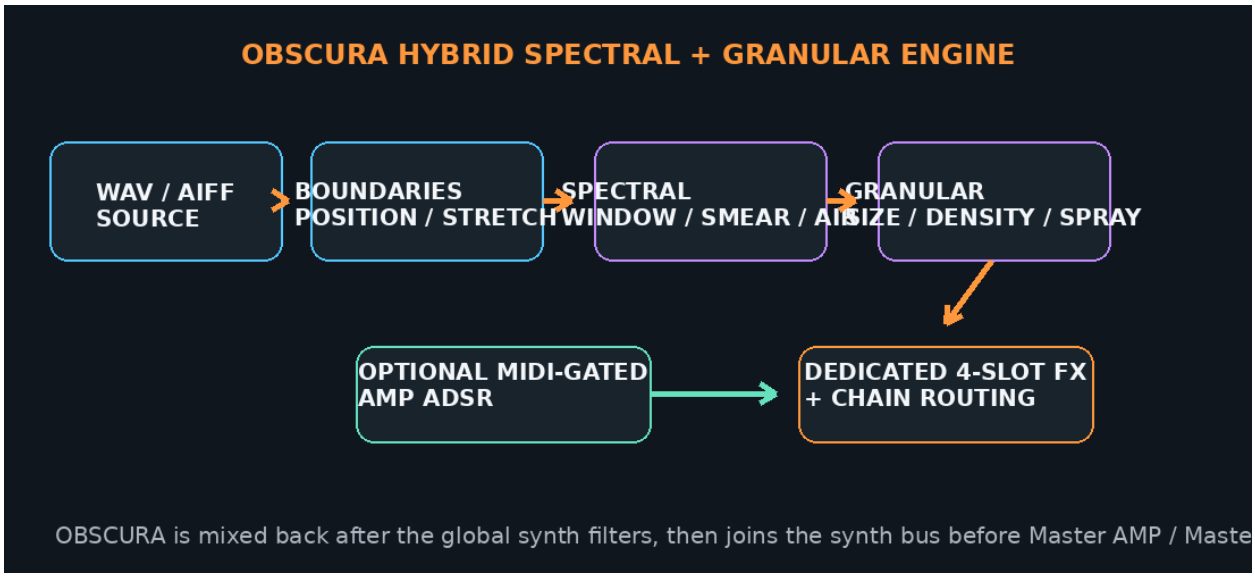
8. Motores OBSCURA 1-2 espectrales + granulares

OBSCURA 1 y OBSCURA 2 son motores independientes de manipulación WAV/AIFF. El motor espectral y la nube granular pueden usarse juntos. SOURCE ofrece Start/End, Loop Start/End, Position, Stretch, pitch, root note, key tracking, level, pan, width y comportamiento de fade.

Spectral Stretch va de 0.25x a 1000x. Los controles espectrales incluyen FFT Window, Overlap, Smear, Harmonics, Air, Freeze, Phase Lock y Ping-Pong. Los granulares incluyen Grain Size, Density, Spray, Pitch Spread, Stereo Spread y Reverse Grains.

OBSCURA tiene un AMP ADSR de salida separado. MIDI GATE OFF conserva reproducción continua de textura; MIDI GATE ON hace que la envolvente responda a note-on/note-off. Cada OBSCURA posee rack FX propio de cuatro slots con la misma topología CHAIN. Sus retornos se mezclan después de los filtros globales de osciladores, por lo que un filtro de synth cerrado no silencia una textura continua.

CONTROL	FUNCIÓN / USO
LOAD WAV / AIFF	Carga audio fuente.
START / END / LOOP START / LOOP END	Define límites de reproducción y loop.
POSITION / STRETCH	Position espectral y stretch 0.25x-1000x.
COARSE / FINE / ROOT / KEY TRACK	Configuración de pitch y seguimiento MIDI.
LEVEL / PAN / WIDTH	Nivel y colocación estéreo.
FREEZE / PHASE LOCK / PING-PONG	Freeze, Phase Lock y recorrido Ping-Pong.
WINDOW / OVERLAP / SMEAR / HARMONICS / AIR	Resolución espectral, suavidad, difusión, armónicos y aire.
GRANULAR	Grain Size, Density, Spray, Pitch Spread, Stereo Spread y Reverse Grains.
AMP MIDI GATE + ADSR	Envolvente VCA opcional; OFF conserva texturas continuas.



9. Motor KICK, secuenciador y KICK FX

KICK es un motor one-shot sintetizado dedicado, no un reproductor de samples. Veinte perfiles de estilo establecen gramáticas de síntesis diferentes, entre ellos EDM, Rumble, Hardstyle, Hardcore, 808, Big Room, Techno, Industrial, Rawstyle, Gabber, Frenchcore, Trap 808 y Drum & Bass.

Los controles modelan pitch drop y pitch decay, body, punch, click, click tone, drive, character, sub, rumble, rumble decay, rumble tone y nivel final. TRIGGER permite escuchar el kick actual sin enviar ni consumir MIDI.

El secuenciador interno KICK admite 16, 32 o 64 pasos, host sync o tempo interno 40-300 BPM, cinco divisiones y swing. KICK también tiene rack FX independiente. Su bus evita Master AMP y Master FX, se suma después de Master FX y luego pasa con toda la mezcla por Distortion y Safety Limiter.

CONTROL	FUNCIÓN / USO
STYLE	20 perfiles de síntesis.
TUNE / PITCH DROP / PITCH DECAY	Afinación y envolvente de pitch descendente.
DECAY / PUNCH / BODY	Cola, impacto y cuerpo.
CLICK / CLICK TONE	Cantidad y frecuencia del click.
DRIVE / CHARACTER / SUB	Densidad, carácter y sub.
RUMBLE / DECAY / TONE	Componente rumble de baja frecuencia.
KICK SEQUENCER	16/32/64 pasos, Host Sync, Tempo, Division y Swing.
KICK FX	Rack independiente de 4 slots con CHAIN.

Estilos de kick

EDM / Rumble / Hardstyle / Hardcore / 808 / Big Room / Festival EDM / House / Tech House / Disco / Techno / Industrial / Rawstyle / Gabber / Frenchcore / Uptempo / 808 Distorted / Trap 808 / Drum & Bass / Electro

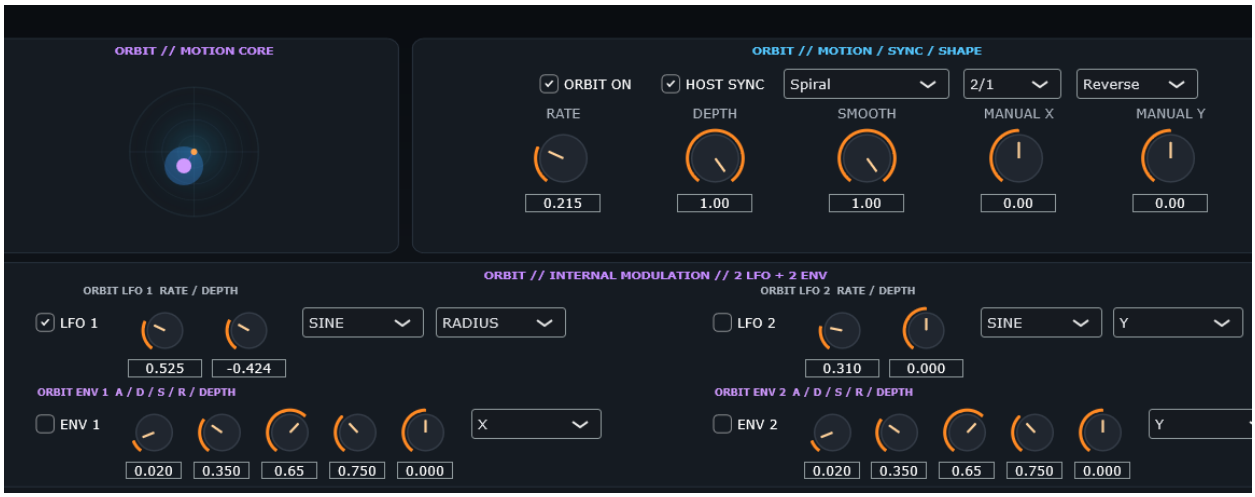
10. Motor de movimiento ORBIT

ORBIT es un modulador global multi-eje para movimiento evolutivo. Los modos son Manual, Circle, Ellipse, Spiral, Figure-8 y Pendulum. El timing puede ser libre o sincronizado al host. Las direcciones son Forward, Reverse, Ping-Pong, Alternate Cycle, Random / Cycle y Random / Note.

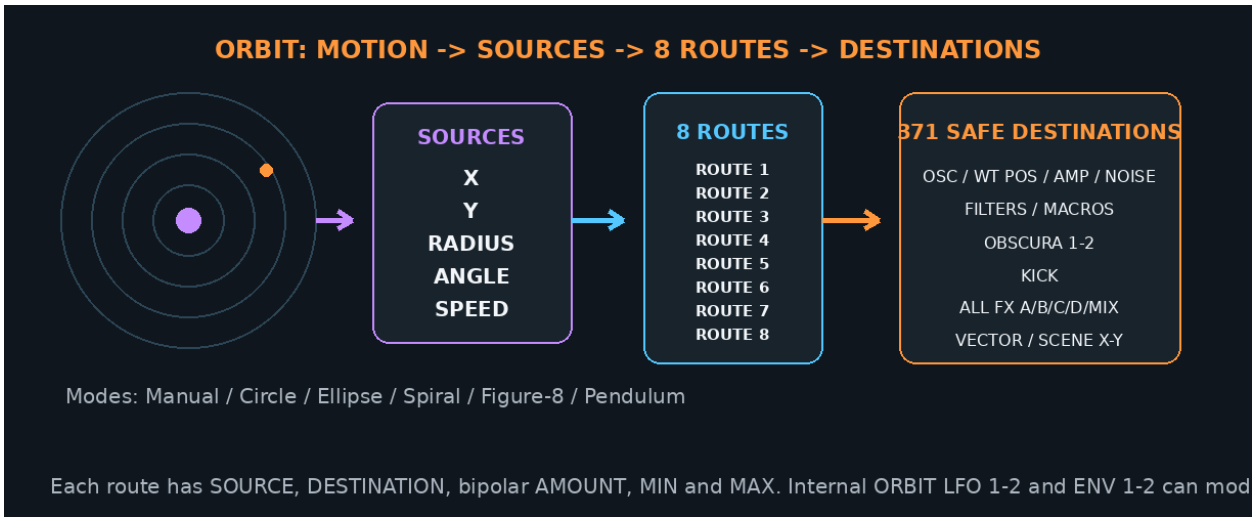
ORBIT produce cinco fuentes: X, Y, RADIUS, ANGLE y SPEED. Ocho rutas pueden elegir fuente, destino, Amount bipolar y ventana Min/Max. Al usar el registro central, ORBIT puede mover WT POS, filtros, OBSCURA, KICK, FX A/B/C/D/MIX, VECTOR y coordenadas Scene Morph.

Dos LFO internos y dos envolventes ADSR internas de ORBIT pueden modular X, Y, RADIUS o ANGLE antes de evaluar las ocho rutas. La GUI mantiene intacto el valor base del host/preset: el marcador cyan representa la base almacenada y el puntero naranja muestra el valor DSP efectivo.

CONTROL	FUNCIÓN / USO
ORBIT ON / MOTION	Activa ORBIT y elige movimiento.
HOST SYNC / RATE / DIVISION	Velocidad libre o división sincronizada.
DIRECTION	Seis modos de dirección.
DEPTH / SMOOTH / MANUAL X/Y	Profundidad, suavizado y coordenadas manuales.
SOURCE	Cada ruta lee X, Y, RADIUS, ANGLE o SPEED.
DESTINATION / AMOUNT / MIN / MAX	Destino, depth bipolar y rango de cada una de 8 rutas.
ORBIT LFO 1-2	LFO internos para X/Y/RADIUS/ANGLE.
ORBIT ENV 1-2	ADSR internas para X/Y/RADIUS/ANGLE.



Workspace ORBIT - núcleo de movimiento y 2 LFO + 2 ENV internos.



11. Mezclador VECTOR y SCENE MORPH A/B/C/D

VECTOR es un mezclador de cuatro esquinas exclusivo para OSC 1-4. A = OSC 1 (arriba izquierda), B = OSC 2 (arriba derecha), C = OSC 3 (abajo izquierda) y D = OSC 4 (abajo derecha). Hay leyes BILINEAR y EQUAL POWER, además de Curve y Smoothing. ORBIT puede inyectarse en X e Y mediante ORBIT > X y ORBIT > Y.

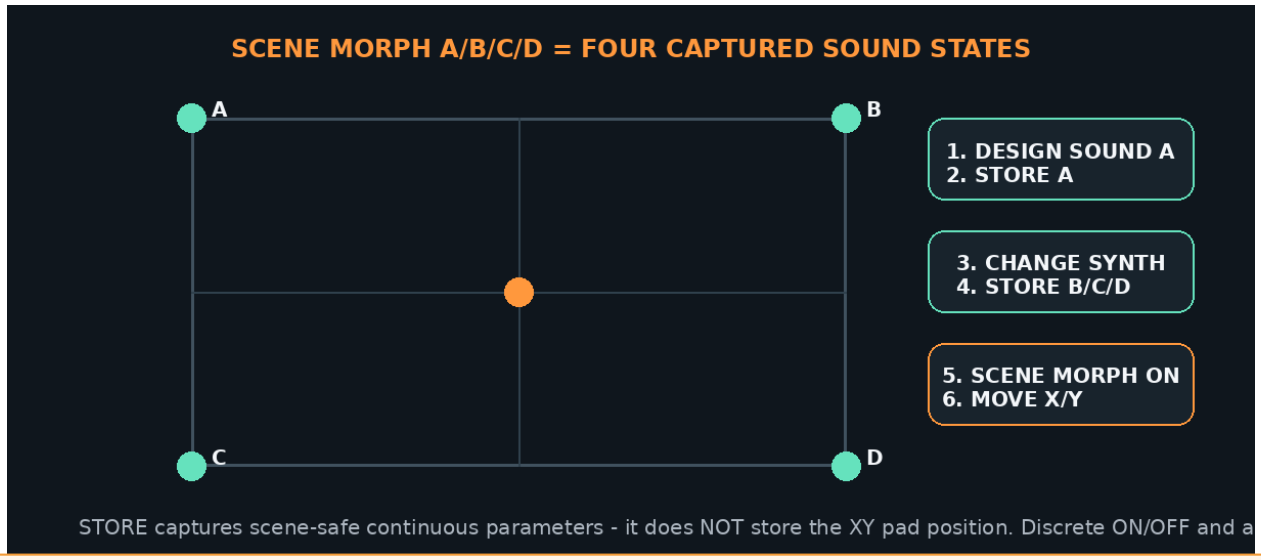
SCENE MORPH es un sistema separado de cuatro snapshots en el mismo espacio. STORE A/B/C/D captura los parámetros continuos seguros actuales. No guarda la posición del pad. Flujo correcto: diseña sonido A -> STORE A; cambia realmente el sintetizador -> STORE B; repite C y D; activa SCENE MORPH; mueve Scene X/Y.

Solo se interpolan parámetros continuos seguros. Elecciones discretas como tipo de FX, waveform y ON/OFF permanecen en su estado base. El orden es BASE -> SCENE MORPH -> ENV/LFO -> ORBIT. Scene X/Y también son destinos de modulación, así que ORBIT puede recorrer automáticamente las escenas.

CONTROL	FUNCIÓN / USO
VECTOR ON	Activa mezcla XY de cuatro OSC.
VECTOR LAW	Ley BILINEAR o EQUAL POWER.
VECTOR X / Y	Posición manual en el campo de mezcla.
CURVE / SMOOTH	Curva de crossfade y suavizado.
ORBIT > X / Y	Inyecta ORBIT en los ejes VECTOR.
STORE A/B/C/D	Captura parámetros continuos seguros en cuatro snapshots.
SCENE MORPH ON / X / Y / SMOOTH	Activa y navega los cuatro estados.
CLEAR SCENES	Borra scenes sin cambiar el sonido base actual.



Workspace VECTOR + Scene Morph. La barra superior se recorta para centrarse en los controles.



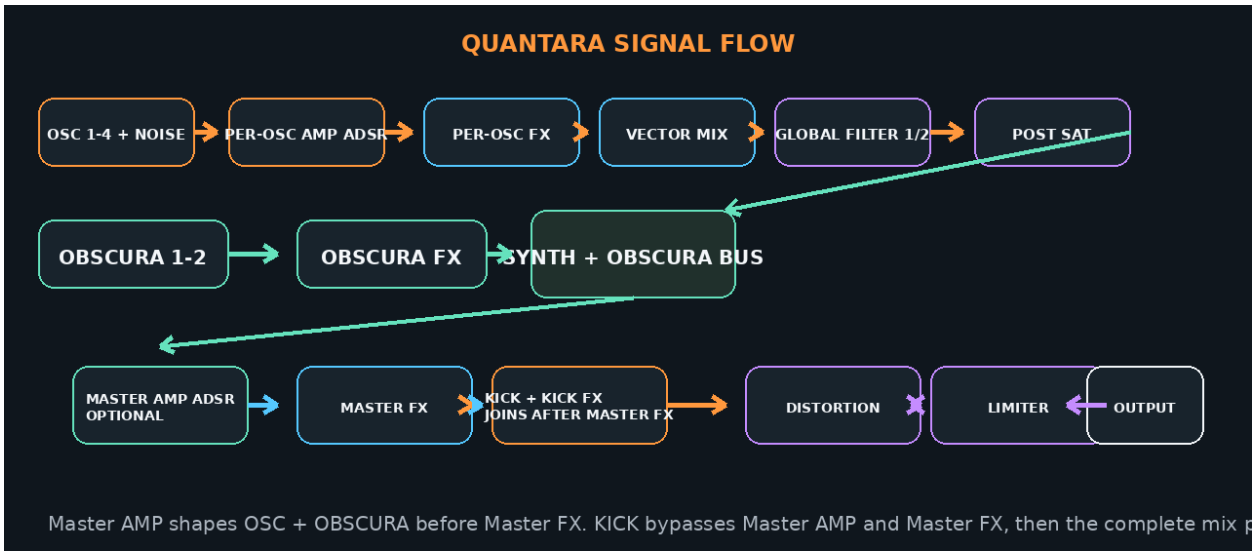
Importante: STORE A/B/C/D captura parámetros del estado sonoro, no la posición XY. Mover el pad antes de guardar no crea una escena distinta si los parámetros del synth no cambian.

12. MASTER FX, Master AMP ADSR, Distortion y salida

DIST / MASTER contiene MASTER FX, DISTORTION y OUTPUT. El Master AMP ADSR opcional modela el bus combinado OSC + OBSCURA antes de Master FX. Es note-count aware: la primera nota inicia Attack y el último note-off inicia Release. Al estar antes de Master FX, las colas de reverb/delay continúan naturalmente.

KICK permanece independiente de Master AMP y Master FX. Tras Master FX se mezcla KICK y después toda la señal entra en Distortion. Hay diez modos: Clean, Warm, Tube, Diode, Acid Clip, Fold, Fuzz, Transistor, Rectifier y Hard Clip. La etapa final contiene Output, calidad Eco/Normal/High y Safety Limiter opcional.

CONTROL	FUNCIÓN / USO
MASTER AMP ENV	ADSR opcional sobre OSC+OBSCURA antes de Master FX.
MASTER FX	Rack independiente de 4 slots con CHAIN.
DISTORTION ON / TYPE	Bypass o selecciona uno de 10 algoritmos.
DRIVE / TONE / MIX / LEVEL	Cantidad, tono, dry/wet y trim posterior.
OUTPUT	Nivel final -24 dB a +6 dB.
QUALITY	Calidad Eco, Normal o High.
SAFETY LIMITER	Protección final opcional.



Modos de distorsión

Clean / Warm / Tube / Diode / Acid Clip / Fold / Fuzz / Transistor / Rectifier / Hard Clip

13. MIDI, automatización y feedback visual

Pitch Bend MIDI es global a +/-2 semitonos para OSC 1-4 y las voces del Piano Roll. Mod Wheel CC1 añade vibrato de interpretación a aproximadamente 5.5 Hz con profundidad máxima de +/-50 cents. Reset All Controllers devuelve ambos a neutral. Estos estados de hardware no sobrescriben valores de preset/APVTS.

La mayoría de controles continuos son automatizables por host. ENV/LFO, ORBIT y Scene Morph aplican capas sobre los parámetros base sin reescribirlos destructivamente. El preset o la automatización conserva la base mientras el valor efectivo puede moverse alrededor.

14. Solución de problemas, CPU y flujo seguro

Si no hay sonido en Wavetable, normalmente el oscilador está en modo Wavetable pero no hay WAV/WAVE externo válido seleccionado. Abre la carpeta Wavetables instalada, coloca el archivo, pulsa REFRESH WAVES y selecciónalo de nuevo. Los presets guardan rutas relativas a la raíz y realizan una reubicación estricta dentro de esa biblioteca.

Con CPU alta, reduce primero unison, overlap/density de OBSCURA, reverbs largos y número de FX activos. Cambia Quality de High a Normal o Eco durante el diseño y vuelve a High para el render final si es necesario.

Para problemas de preset, usa INIT para verificar el motor desde un estado neutro. Una carga válida siempre empieza por INIT y se silencia durante la reconstrucción; si falta una wavetable requerida, QUANTARA queda limpio en lugar de conservar parte del sonido anterior.

Síntoma	Causa / acción
No sound in Wavetable	Select a valid external WAV/WAVE or switch to Saw/Square/Sine/Triangle.
Preset fails to recall	Check required external wavetable path; QUANTARA remains on clean INIT on failure.
Too much CPU	Reduce unison, OBSCURA overlap/density, active FX, long reverbs; lower Quality.
Unexpected FX routing	Check CHAIN 1->2 / 2->3 / 3->4; OFF starts a parallel branch.
Scene Morph seems inactive	Capture genuinely different synth states into A/B/C/D, then enable Scene Morph.
ORBIT moves sound but knob base value stays	Normal: base/automation remains static while live pointer shows effective modulation.

15. Recetas prácticas de sound design

Movimiento cinematográfico: usa dos wavetables externas contrastantes en OSC 1 y OSC 3, releases lentos, resonancia moderada y una reverb larga en rama paralela. Ruta ORBIT RADIUS a Filter 1 Cutoff, SPEED a OSC 1 WT POS y ANGLE a un parámetro de reverb. Empieza con Min/Max estrechos.

Bass moderno: usa un oscilador para el fundamental y otro una octava o quinta arriba, unison moderado, Filter 1 low-pass con drive y AMP corto. Añade una rama paralela de distorsión en el rack OSC para conservar el grave limpio. Usa poco Mod Wheel vibrato.

Pad Scene Morph: captura A con filtro oscuro/WT POS bajo, B más brillante y ancho, C con más reverb y envolvente lenta, D más seco y corto. Activa Scene Morph y automatiza X/Y o enruta ORBIT a Scene X/Y para evolución larga.

QUANTARA V0.9.9.0.78

Die UI-Bezeichnungen werden exakt so wiedergegeben, wie sie in QUANTARA erscheinen.
Technische Begriffe wie WT POS, ORBIT und CHAIN bleiben deshalb bewusst englisch.

1. Einstieg und Workspace-Uebersicht

QUANTARA ist ein hybrider Windows-x64-VST3-Synthesizer mit vier unabhaengigen Oszillator-Lanes, zwei spektral/granularen OBSCURA-Engines, einer eigenen synthetisierten KICK-Engine, globalen Dual-Filtern, fuenf Envelopes, fuenf LFOs, ORBIT, VECTOR, Scene Morph und unabhaengigen 4-Slot-FX-Racks. Dieses Handbuch dokumentiert den Funktionsstand V0.9.9.0.78 und Preset-Schema 25.

Das Plug-in startet mit 1280 x 740 und skaliert proportional bis 2000 x 1157. Die sichtbare Hauptnavigation lautet PRESETS, PERFORMANCE, OSC, OBSCURA, KICK, ORBIT, VECTOR und DIST / MASTER. OSC, OBSCURA, KICK und DIST / MASTER besitzen eigene Unterseiten.

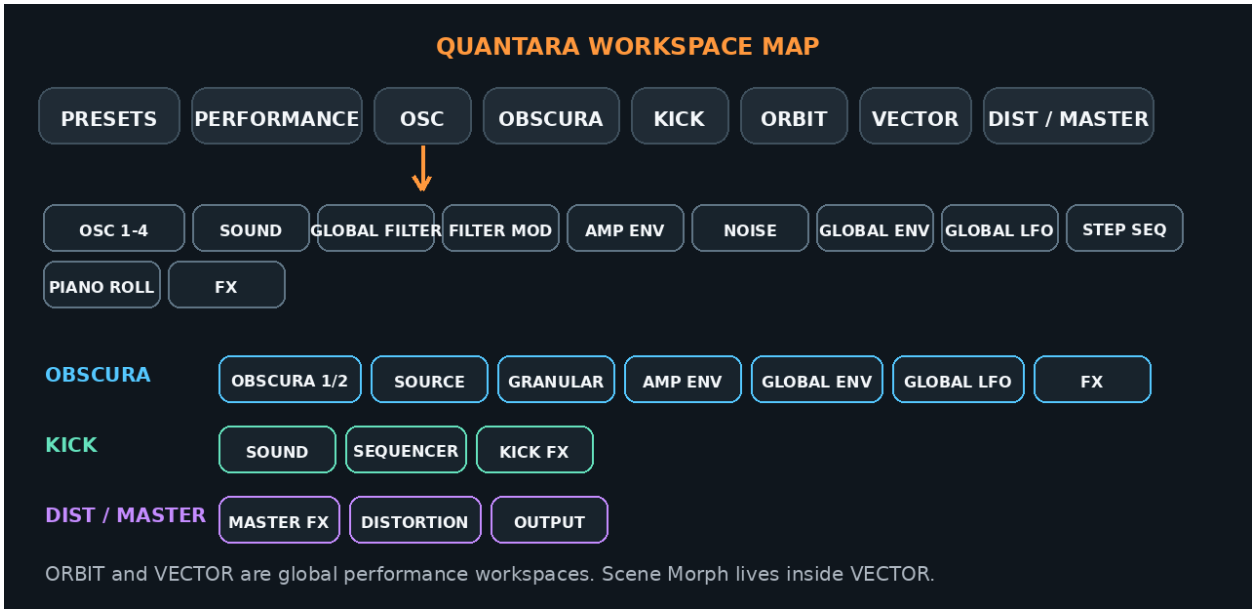
Fuer einen sauberen Ersttest INIT laden, nur einen Oszillator aktivieren, Saw oder Square waehlen, optionale FX und Sequencer ausgeschaltet lassen und MIDI aus der DAW spielen. Danach den Patch Modul fuer Modul aufbauen.

Installation und feste Pfade

VST3: C:\Program Files\Common Files\VST3\QUANTARA.vst3

Presets: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Presets

Wavetables: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Wavetables



2. Presets, INIT und Content-Ordner

PRESETS ist ein ordnerbasierter TFT-Browser. Presets verwenden .qpreset und Schema 25. Der feste Preset-Pfad liegt im installierten Bundle: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Presets. Ordnernamen werden zu Browser-Kategorien.

Jeder gueltige Preset-Load arbeitet strikt INIT-first. QUANTARA mutet die gesamte Umschaltung, setzt einen sauberen INIT-Zustand, stellt externe Wavetables und nicht-APVTS-Daten wieder her und laedt danach den Parameterzustand. So bleiben keine Sequenzen, Samples, Modulationskurven oder Parameter des vorherigen Sounds uebrig.

SAVE SELECTED ueberschreibt das ausgewaehlte Benutzer-.qpreset mit dem kompletten aktuellen Zustand und laedt danach nicht neu. INIT ist virtuell und kann nicht ueberschrieben werden. SAVE AS erzeugt ein neues Preset. IMPORT / LOAD laedt .qpreset von Disk. Bei Fokus im Browser laden Pfeil Hoch/Runter das vorherige bzw. naechste sichtbare Preset.

CONTROL	FUNKTION / VERWENDUNG
Preset browser	Ordner links, Presets rechts; Klick laedt das Preset.

CONTROL	FUNKTION / VERWENDUNG
SAVE SELECTED	Ueberschreibt das ausgewaehlte User-Preset mit dem kompletten Zustand; INIT ist geschuetzt.
SAVE AS	Erzeugt ein neues .qpreset unter neuem Namen/Pfad.
IMPORT / LOAD	Laedt .qpreset ueber den INIT-first-Recall.
REFRESH	Scannt die feste Preset-Library neu.
DELETE PRESET	Loescht nur das ausgewaehlte .qpreset; Wavetables bleiben erhalten.
OPEN PRESET FOLDER	Oeffnet QUANTARA.vst3\Presets.

3. PERFORMANCE-Seite

PERFORMANCE ist der schnellste Weg, einen Sound zu formen, ohne tiefere Workspaces zu oeffnen. Der obere Bereich steuert Filter/Envelope/Accent, der untere Bereich bietet Schaltungs-Kalibrierung und vier Performance-Makros.

Die Makros wirken als Overlays auf mehrere DSP-Bloecke, ohne Basisparameter zu ueberschreiben. ACID erhoeht Squelch und Envelope/Accent-Interaktion, DRIVE fuegt Saettigung und Body hinzu, TENSION steigert Bewegung und harmonische Spannung, SPACE erhoeht Breite und Wet-FX-Anteil.

CONTROL	FUNKTION / VERWENDUNG
MASTER TUNE	Globaler Tuning-Offset in Cent.
CUTOFF / RESONANCE	Helligkeit von Filter 1 und Resonanzspitze.
ENV MOD / DECAY	Tiefe und Decay der Haupt-Filterhuelle.
ACCENT	Globale Accent-Staerke vor dem Detail-Routing.
CONDITION / VCF TRIM	Schaltungscharakter und Feinabgleich des Filters.
ACC DECAY / ACC STACK	Accent-Dauer und Akkumulation.
SLIDE TIME	Portamento-Zeit fuer Slide/Legato.
OUT ASYM	Kontrollierte Ausgangsasymmetrie fuer zusaetzliche Obertone.
ACID / DRIVE / TENSION / SPACE	Vier nicht-destruktive Performance-Makros fuer mehrere DSP-Bloecke.

4. OSC-Workspace: Sound, Wavetable, Tuning, AMP ENV und Noise

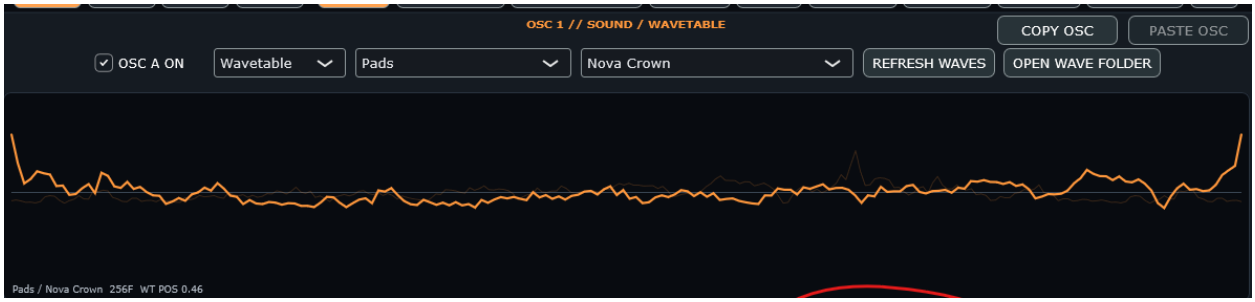
OSC 1-4 sind vollstaendig unabhaengige Sound-Lanes. Zuerst OSC 1 / OSC 2 / OSC 3 / OSC 4 waehlen, danach SOUND, GLOBAL FILTER, GLOBAL FILTER MOD, AMP ENV, NOISE, GLOBAL ENV, GLOBAL LFO, STEP SEQ, PIANO ROLL oder FX.

Saw, Square, Sine und Triangle werden intern erzeugt. Wavetable-Audio ist ausschliesslich extern. Der Browser scannt QUANTARA.vst3\Wavetables rekursiv; der Root erscheint als Factory Wave Tables, Unterordner direkt als Kategorien. WAV und WAVE werden akzeptiert. Serum-kompatible Tabellen nutzen 2048 Samples pro Frame und bis zu 256 Frames; kuerzere Zyklen koennen auf das interne 2048-Sample-Format konvertiert werden.

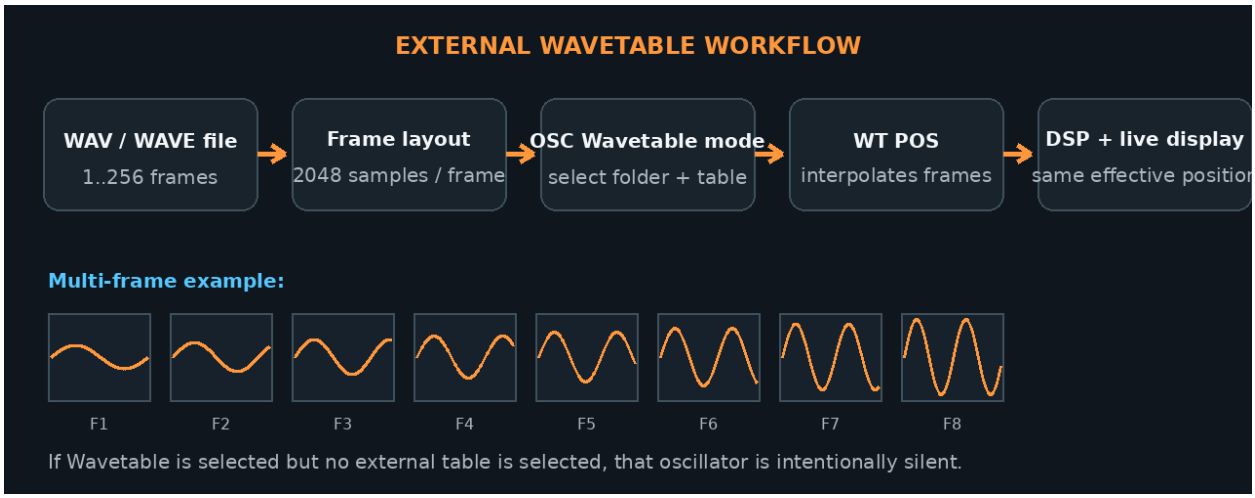
WT POS ist die tatsaechliche Frame-Position fuer DSP und Live-Waveform. ENV/LFO, ORBIT und Scene Morph koennen WT POS bewegen, ohne den gespeicherten Basiswert zu ueberschreiben. Ist Wavetable gewaehlt, aber keine externe Datei ausgewaehlt, bleibt der Wavetable-Oszillator absichtlich stumm.

Jeder Oszillator besitzt ausserdem eine eigene AMP-ADSR mit bis zu ca. 60 Sekunden Attack/Decay/Release, unabhaengige Octave/Semitone/Fine/Tune-Steuerung, optionales Unison, Stereo Spread, MIDI Glide und einen Noise-Generator mit acht Noise-Typen.

CONTROL	FUNKTION / VERWENDUNG
OSC ON	Aktiviert/stummschaltet den OSC ohne Einstellungen zu verlieren.
SOURCE	Saw, Square, Wavetable, Sine oder Triangle.
CATEGORY / TABLE	Waehlt Ordner und externe WAV/WAVE-Tabelle.
REFRESH WAVES / OPEN WAVE FOLDER	Scannt oder oeffnet die installierte Wavetable-Library.
LEVEL / SEMI / FINE / WT POS	Layer-Level, Grob/Feintuning und Wavetable-Frameposition.
OCTAVE / TUNE	Unabhaengige Oktave und Tuning-Offset.
UNISON / DETUNE / SPREAD	0-12 Zusatzstimmen mit Detune und Stereo-Verteilung.
MIDI GLIDE	Portamento pro Oszillator fuer verbundene Noten.
AMP ADSR	VCA-Huelle pro OSC; Attack/Decay/Release bis ca. 60 s.
NOISE	White, Pink, Brown, Blue, Violet, Digital, Crackle oder Velvet plus Level/Color/Width.



OSC SOUND / WAVETABLE - externe Ordnerauswahl und Live-Waveform.



Wavetable-Formatdetails

Item	Specification
Extensions	.wav / .wave
Native multi-frame layout	2048 samples per frame
Frames	1-256
Morph	WT POS interpolates between adjacent frames
Short cycles	Auto-converted/resampled to 2048 samples
Browser root	Factory Wave Tables
Recall	Relative path inside QUANTARA.vst3\Wavetables

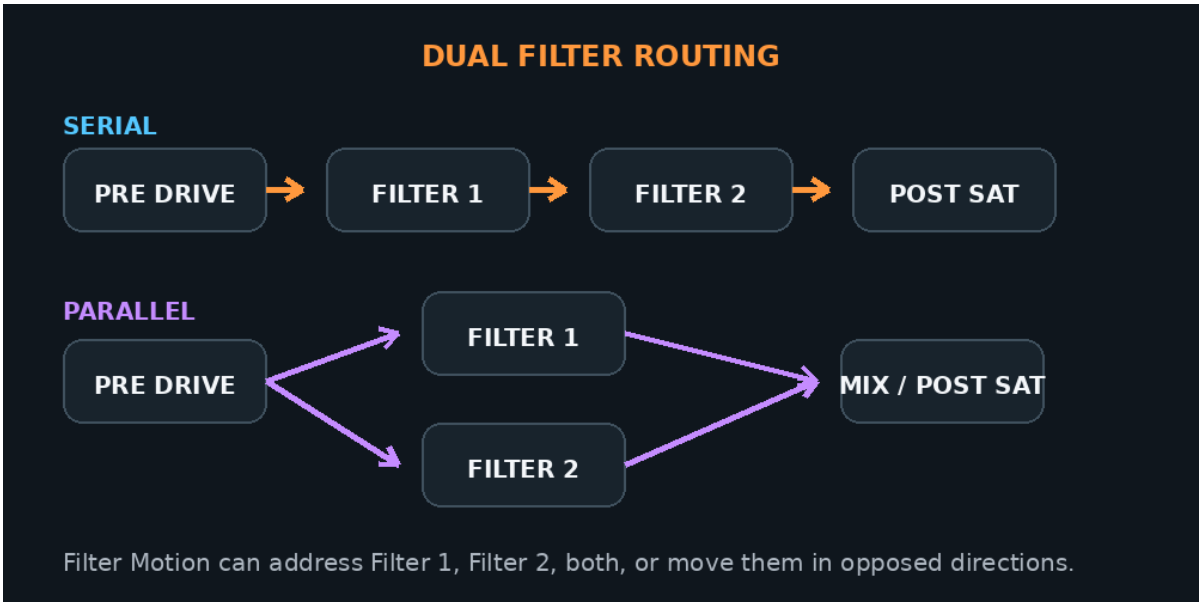
5. GLOBAL FILTER, FILTER MOD, ENV 1-5 und LFO 1-5

Die Filterarchitektur ist bewusst global fuer den Oszillatorbus. Filter 1 ist bypassbar und bietet zehn Modelle. Filter 2 ist optional und kann SERIAL oder PARALLEL zu Filter 1 arbeiten. Pre Drive veraendert das Obertonspektrum vor dem Filter; Low Body stellt bei hoher Resonanz/Drive kontrolliertes Fundament wieder her; Post Filter Saturation verdichtet nach dem Filter.

GLOBAL FILTER MOD bietet einen tempoabhaengigen Motion-Generator und Accent-Routing. Motion kann Filter 1, Filter 2, beide gemeinsam oder beide entgegengesetzt bewegen. Accent kann getrennt zu Cutoff, Drive und VCA geroutet werden.

Fuenf globale Envelopes und fuenf globale LFOs besitzen jeweils vier bipolare Routen. Das zentrale Registry enthaelt aktuell 371 echtzeit-sichere Ziele, darunter OSC-Tuning, WT POS, AMP-Zeiten, Noise, Filter, Sequencer-Timing, OBSCURA, KICK, VECTOR, Scene Morph sowie alle kontinuierlichen A/B/C/D/MIX-Parameter aller FX-Racks. Diskrete Algorithmen und ON/OFF-Schalter sind bewusst ausgeschlossen.

CONTROL	FUNKTION / VERWENDUNG
FILTER 1 ON / MODEL	Echter Bypass plus 10 Filtermodelle.
CUTOFF / RESONANCE	40-16000 Hz Cutoff und Resonanz.
FILTER DRIVE / CHARACTER / KEY TRACK	Nichtlinearer Drive, Character und Key Tracking.
PRE DRIVE / LOW BODY	Obertone vor dem Filter und Low-End-Verstaerkung.
FILTER 2	Optionaler zweiter Filter mit Model/Cutoff/Resonance/Drive/Mix.
ROUTING	SERIAL: Filter 2 nach Filter 1; PARALLEL: beide aus demselben Eingang.
MOTION RATE / SHAPE / TARGET / DEPTH	Eigener Tempo-Motion-Generator fuer einen/beide Filter.
ACC > CUTOFF / DRIVE / VCA	Unabhaengige Accent-Routing-Tiefen.
POST FILTER SAT	Saettigung nach dem Filter.



Filtermodelle

Reactor Diode LP / 18dB LP / 24dB Ladder LP / High Pass / Band Pass / Notch / Morph LP/BP/HP / Resonator / Comb / Formant

Globale Modulationscontrols

CONTROL	FUNKTION / VERWENDUNG
ENV 1-5 ADSR	Attack/Decay/Sustain/Release, Curve und Retrigger.
ENV DRAW MODE	Eigene Huellkurve zeichnen, Draw Time setzen und optional loopen.
LFO 1-5	Frei 0.02-30 Hz oder Host-Sync mit 14 Divisions.
LFO SHAPE	Sine, Triangle, Saw Up/Down, Square, S&H;, Smooth Random oder DRAW.
ROUTE 1-4	Destination + bipolarer Amount; negative Werte invertieren.
LIVE MOD FEEDBACK	Basiswert bleibt gespeichert/automatisierbar; effektiver Zeiger zeigt Modulation.

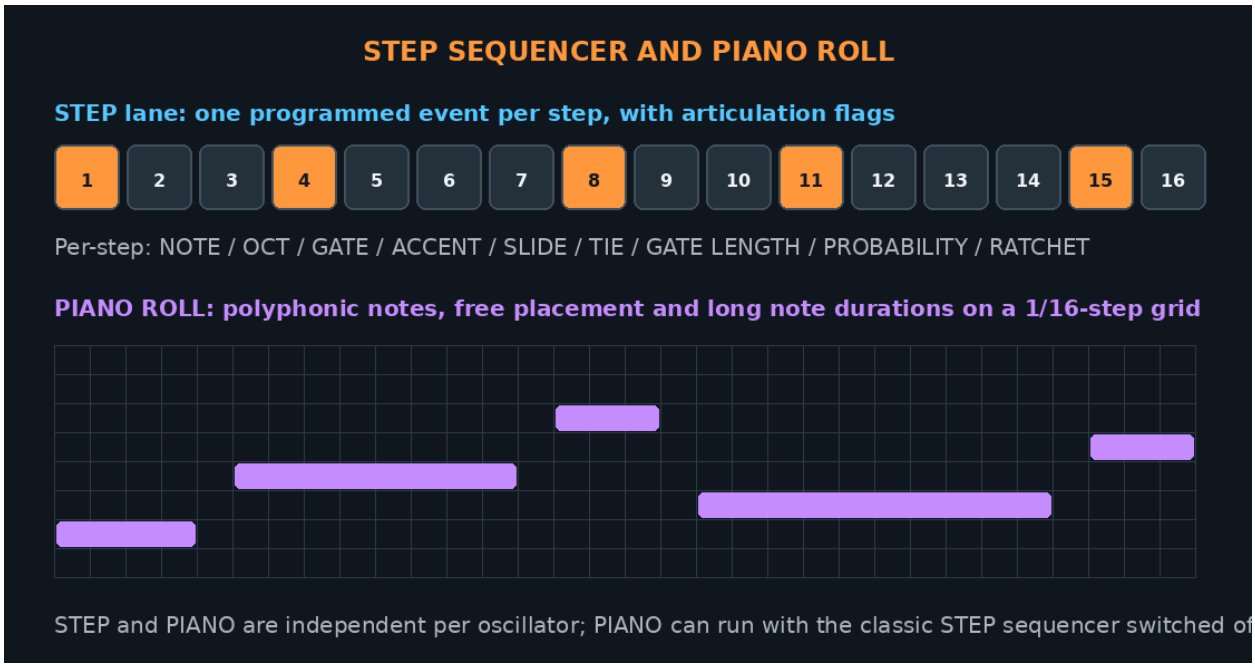
6. STEP-Sequencer und PIANO ROLL

Jeder Oszillator besitzt einen eigenen klassischen STEP-Sequencer und einen unabhaengigen PIANO ROLL. STEP ist eine Event-pro-Step-Lane mit Artikulation; PIANO ROLL ist polyphon und erlaubt mehrere gleichzeitige Noten sowie lange Noten ueber viele Steps. PIANO kann auch laufen, wenn STEP ausgeschaltet ist.

Jeder Oszillator hat eigenen Clock-/Host-Sync-Zustand, Tempo, Division, Pattern-Laenge, Swing, Transpose, Play Mode und Slide Time. Pattern-Laengen: 4, 8, 16, 32 oder 64. STEP bietet Note, Octave, Gate, Accent, Slide, Tie, Gate Length, Probability und Ratchet. PIANO bietet Velocity, Density, Octave Range und maximale Generator-Notenlaenge.

GENERATE ist Key/Scale-aware und verwendet Genre- und Rollenregeln statt jeden Step zufaellig zu setzen. Generierte Noten bleiben innerhalb der gewaehlten Tonart/Skala. Enthalten sind 27 Genre-Grammatiken, 10 Skalen/Modi und 11 musikalische Rollen.

CONTROL	FUNKTION / VERWENDUNG
SEQ ON / PIANO ON	STEP und PIANO sind unabhaengig aktivierbar.
HOST SYNC / TEMPO	DAW-Tempo folgen oder 40-300 BPM intern.
DIVISION	Gerade und Triplet-Divisions.
PATTERN LENGTH	4, 8, 16, 32 oder 64 Steps.
SWING / TRANSPOSE / PLAY MODE	Groove, Transpose und Wiedergabereihenfolge.
STEP FLAGS	Gate, Accent, Slide, Tie, Gate Length, Probability und 1x-4x Ratchet.
PIANO GENERATOR	Density, Oktavbereich, maximale Notenlaenge und Velocity.
GENERATE	Erzeugt und bewertet Kandidaten aus Key + Scale + Genre + Role.



Generator-Skalen

NATURAL MINOR / MAJOR / DORIAN / PHRYGIAN / MIXOLYDIAN / HARMONIC MINOR / MELODIC MINOR / MINOR PENTATONIC / BLUES / CHROMATIC

Generator-Rollen

AUTO / MONO CLASSIC / ANALOG BASS / ACID LINE / SEMI-MODULAR / ARPEGGIO / MELODIC LEAD / PLUCK / PAD MOTION / SYNTH BASS / POLYRHYTHM

Genre-Grammatiken

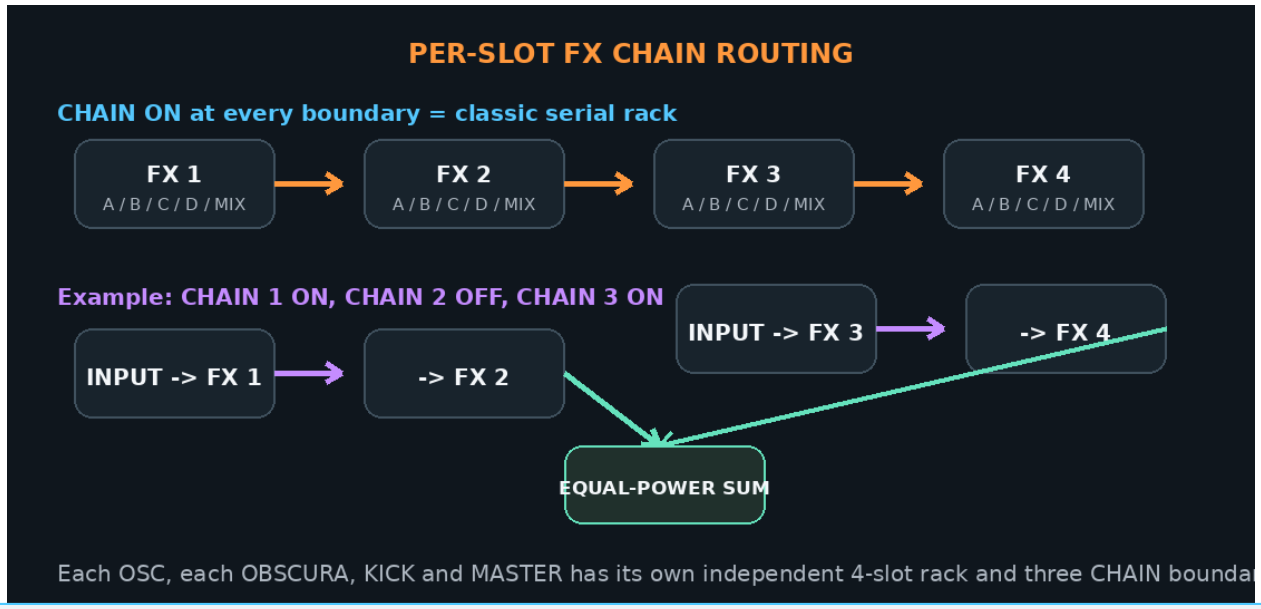
PEAK-TIME TECHNO / ACID TECHNO / HYPNOTIC TECHNO / TRANCE / HARD TECHNO / MELODIC TECHNO / PROGRESSIVE TRANCE / PSYTRANCE / HOUSE / DEEP HOUSE / TECH HOUSE / DISCO / NU-DISCO / EDM / PROG HOUSE / ELECTRO / SYNTHWAVE / POP / R&B; / FUNK / DRUM & BASS / BREAKBEAT / AMBIENT / HIP-HOP / TRAP / UK GARAGE / DUBSTEP / REGGAETON

7. Unabhaengige 4-Slot-FX-Racks und CHAIN-Routing

QUANTARA besitzt unabhaengige 4-Slot-Racks fuer OSC 1-4, OBSCURA 1-2, KICK und MASTER. Kein Rack teilt seinen Zustand mit einem anderen.

Jeder Slot hat ON/OFF, Algorithmus, vier algorithmusabhaengige Parameter A/B/C/D und MIX. Die Labels wechseln mit dem Effekt, z. B. TIME / FEEDBACK / TONE / STEREO fuer Delay oder SIZE / DECAY / DAMP / WIDTH fuer Hall Reverb.

Pro Rack gibt es drei CHAIN-Grenzen: FX1->2, FX2->3, FX3->4. CHAIN ON speist die bearbeitete Ausgabe in den naechsten Slot. CHAIN OFF startet den folgenden Slot als parallelen Zweig vom Rack-Eingang; aktive Zweige werden equal-power summiert. Startup und INIT setzen alle CHAINs auf OFF, ein Schema-25-Preset stellt seine gespeicherten Entscheidungen exakt wieder her.



Die 36 aktuellen FX-Algorithmen stehen in Anhang A. A/B/C/D-Labels wechseln dynamisch.

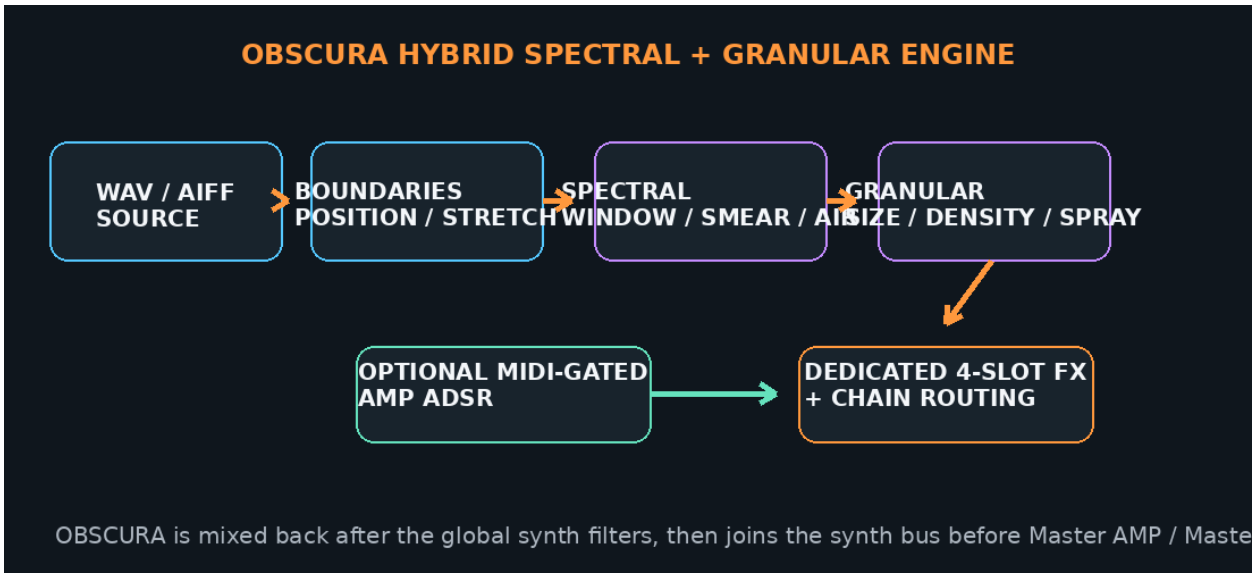
8. OBSCURA 1-2 Hybrid Spectral + Granular

OBSCURA 1 und 2 sind unabhaengige WAV/AIFF-Manipulations-Engines. Spektral-Engine und Granular-Cloud koennen gleichzeitig laufen. SOURCE bietet Start/End, Loop Start/End, Position, Stretch, Pitch, Root Note, Key Tracking, Level, Pan, Width und Fade-Verhalten.

Spectral Stretch reicht von 0.25x bis 1000x. Spektralparameter: FFT Window, Overlap, Smear, Harmonics, Air, Freeze, Phase Lock und Ping-Pong. Granular: Grain Size, Density, Spray, Pitch Spread, Stereo Spread und Reverse Grains.

OBSCURA hat eine separate Output-AMP-ADSR. MIDI GATE OFF erhaelt kontinuierliche Texture-Wiedergabe; MIDI GATE ON koppelt die Output-Envelope an Note-On/Off. Jede OBSCURA besitzt ein eigenes 4-Slot-FX-Rack. Die Returns werden nach den globalen OSC-Filtern zugemischt, sodass ein geschlossenes Synth-Filter eine kontinuierliche OBSCURA-Textur nicht stummschaltet.

CONTROL	FUNKTION / VERWENDUNG
LOAD WAV / AIFF	Laedt Quell-Audio.
START / END / LOOP START / LOOP END	Definiert Playback- und Loop-Grenzen.
POSITION / STRETCH	Spektralposition und 0.25x-1000x Stretch.
COARSE / FINE / ROOT / KEY TRACK	Pitch-Setup und MIDI-bezogenes Tuning.
LEVEL / PAN / WIDTH	Level und Stereo-Platzierung.
FREEZE / PHASE LOCK / PING-PONG	Freeze, Phase Lock und Ping-Pong-Scan.
WINDOW / OVERLAP / SMEAR / HARMONICS / AIR	Spektralauflosung, Glaette, Diffusion, Harmonics und Air.
GRANULAR	Grain Size, Density, Spray, Pitch Spread, Stereo Spread und Reverse Grains.
AMP MIDI GATE + ADSR	Optionale Output-VCA-Huelle; OFF erhaelt kontinuierliche Texturen.



9. KICK-Engine, Sequencer und KICK FX

KICK ist eine eigene synthetisierte One-Shot-Engine und kein Sample-Player. Zwanzig Style-Profile definieren unterschiedliche Synthese-Grammatiken, darunter EDM, Rumble, Hardstyle, Hardcore, 808, Big Room, Techno, Industrial, Rawstyle, Gabber, Frenchcore, Trap 808 und Drum & Bass.

Die Sound-Regler formen Pitch Drop/Pitch Decay, Body, Punch, Click, Click Tone, Drive, Character, Sub, Rumble, Rumble Decay, Rumble Tone und Level. TRIGGER spielt den aktuellen Kick zum Vorhoeren, ohne MIDI zu senden oder zu verbrauchen.

Der interne KICK-Sequencer bietet 16/32/64 Steps, Host Sync oder 40-300 BPM intern, fuenf Divisions und Swing. KICK besitzt ein eigenes 4-Slot-FX-Rack. Der KICK-Bus umgeht Master AMP und Master FX, wird danach zugemischt und passiert mit dem Gesamtmix Distortion und Safety Limiter.

CONTROL	FUNKTION / VERWENDUNG
STYLE	20 Synthese-Profile.
TUNE / PITCH DROP / PITCH DECAY	Grundtuning und Pitch-Drop-Huelle.
DECAY / PUNCH / BODY	Tail, Punch und Body.
CLICK / CLICK TONE	Click-Anteil und Frequenz.
DRIVE / CHARACTER / SUB	Drive, Character und Sub.
RUMBLE / DECAY / TONE	Eigene Low-Frequency-Rumble-Komponente.
KICK SEQUENCER	16/32/64 Steps, Host Sync, Tempo, Division und Swing.
KICK FX	Unabhaengiges 4-Slot-Rack mit CHAIN.

Kick-Styles

EDM / Rumble / Hardstyle / Hardcore / 808 / Big Room / Festival EDM / House / Tech House / Disco / Techno / Industrial / Rawstyle / Gabber / Frenchcore / Uptempo / 808 Distorted / Trap 808 / Drum & Bass / Electro

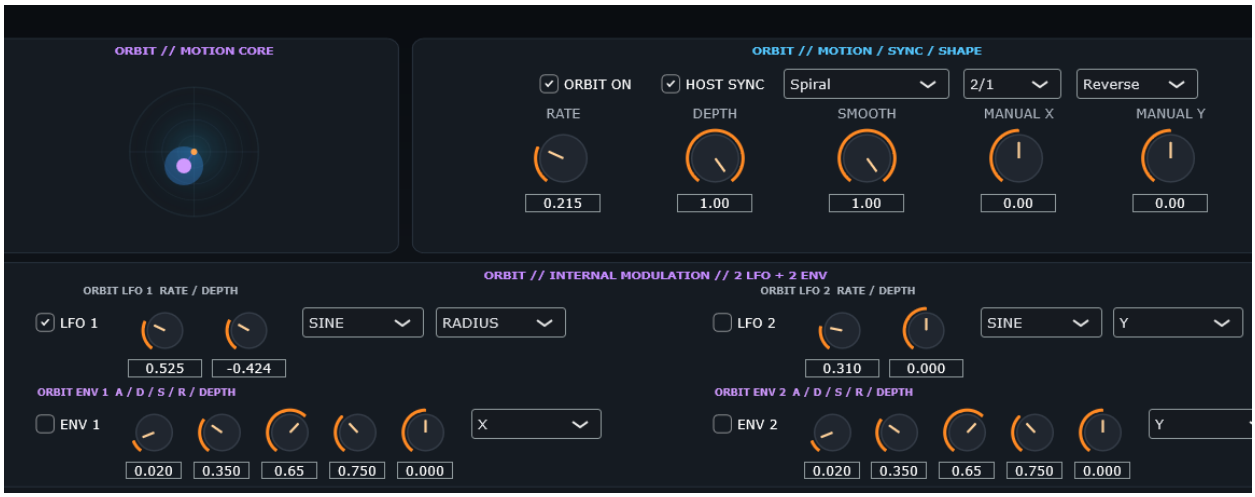
10. ORBIT Motion Engine

ORBIT ist ein globaler Multi-Axis-Modulator fuer evolvierende Bewegung. Motion-Modi: Manual, Circle, Ellipse, Spiral, Figure-8, Pendulum. Timing frei oder host-synchron. Direction: Forward, Reverse, Ping-Pong, Alternate Cycle, Random / Cycle und Random / Note.

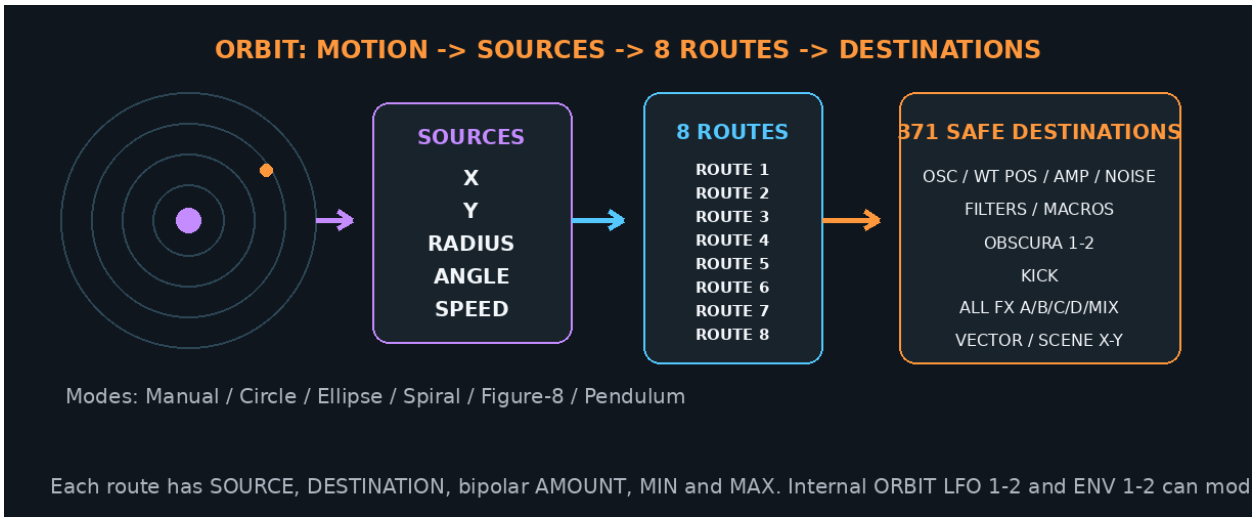
ORBIT erzeugt die Quellen X, Y, RADIUS, ANGLE und SPEED. Acht Routen waehlen jeweils Source, Destination, bipolaren Amount sowie Min/Max. Durch das zentrale Registry kann ORBIT WT POS, Filter, OBSCURA, KICK, FX A/B/C/D/MIX, VECTOR und Scene-Morph-Koordinaten bewegen.

Zwei interne ORBIT-LFOs und zwei ORBIT-ADSRs koennen X, Y, RADIUS oder ANGLE modulieren. Die GUI haelt den Host/Preset-Basiswert unveraendert: Cyan markiert den gespeicherten Basiswert, der orange Zeiger zeigt den effektiven DSP-Wert.

CONTROL	FUNKTION / VERWENDUNG
ORBIT ON / MOTION	ORBIT aktivieren und Motion-Modus waehlen.
HOST SYNC / RATE / DIVISION	Freie Rate oder DAW-synchronisierte Division.
DIRECTION	Sechs Direction-Modi.
DEPTH / SMOOTH / MANUAL X/Y	Gesamttiefe, Smoothing und manuelle Koordinaten.
SOURCE	Jede Route liest X, Y, RADIUS, ANGLE oder SPEED.
DESTINATION / AMOUNT / MIN / MAX	Ziel, bipolarer Amount und Min/Max fuer 8 Routen.
ORBIT LFO 1-2	Interne LFOs fuer X/Y/RADIUS/ANGLE.
ORBIT ENV 1-2	Interne ADSRs fuer X/Y/RADIUS/ANGLE.



ORBIT-Workspace - Motion Core und 2 interne LFO + 2 ENV.



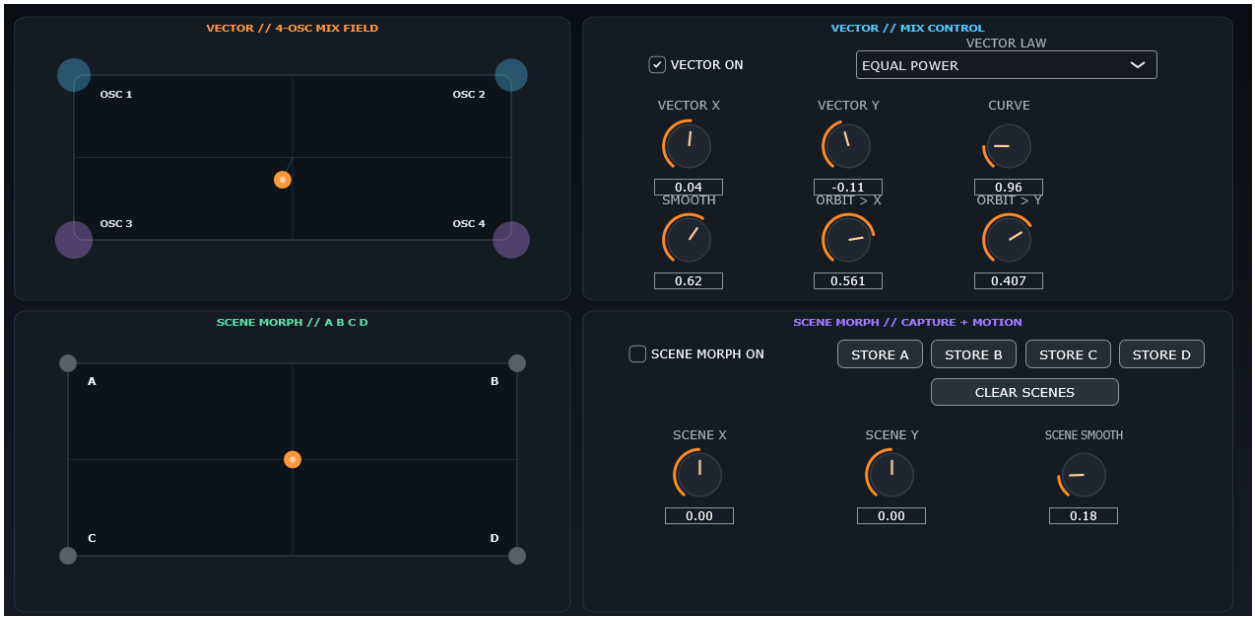
11. VECTOR-Mixer und SCENE MORPH A/B/C/D

VECTOR ist ein Vier-Ecken-Mixer nur fuer OSC 1-4. A = OSC 1 oben links, B = OSC 2 oben rechts, C = OSC 3 unten links, D = OSC 4 unten rechts. BILINEAR und EQUAL POWER stehen zur Wahl, zusaetzlich Curve und Smoothing. ORBIT kann ueber ORBIT > X/Y in VECTOR eingespeist werden.

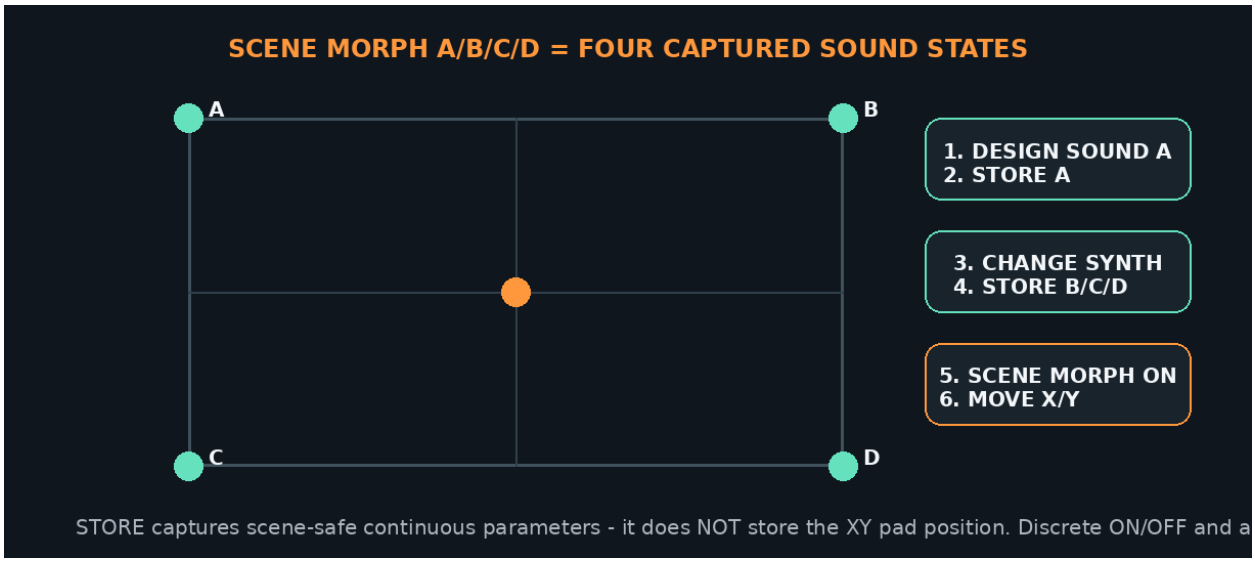
SCENE MORPH ist ein separates Vier-Snapshot-System im selben Workspace. STORE A/B/C/D speichert die aktuellen scene-sicheren kontinuierlichen Parameter - nicht die Pad-Position. Richtig: Sound A gestalten -> STORE A; Synth deutlich veraendern -> STORE B; C/D ebenso; SCENE MORPH ON; dann Scene X/Y bewegen.

Nur sichere kontinuierliche Parameter werden interpoliert. Diskrete FX-Typen, Waveform-Wahlen und ON/OFF bleiben im Basiszustand. Reihenfolge: BASE -> SCENE MORPH -> ENV/LFO -> ORBIT. Scene X/Y sind selbst Modulationsziele, sodass ORBIT automatisch durch die vier Szenen fahren kann.

CONTROL	FUNKTION / VERWENDUNG
VECTOR ON	Aktiviert 4-OSC-XY-Mixing.
VECTOR LAW	BILINEAR oder EQUAL POWER.
VECTOR X / Y	Manuelle Position im OSC-Mixfeld.
CURVE / SMOOTH	Crossfade-Kurve und Smoothing.
ORBIT > X / Y	Speist ORBIT in VECTOR X/Y ein.
STORE A/B/C/D	Speichert scene-sichere kontinuierliche Parameter in vier Snapshots.
SCENE MORPH ON / X / Y / SMOOTH	Aktiviert und navigiert die vier gespeicherten Zustaende.
CLEAR SCENES	Loescht Scenes ohne den aktuellen Base-Sound zu aendern.



VECTOR + Scene Morph Workspace. Die obere Leiste ist abgeschnitten, damit die Controls im Fokus bleiben.



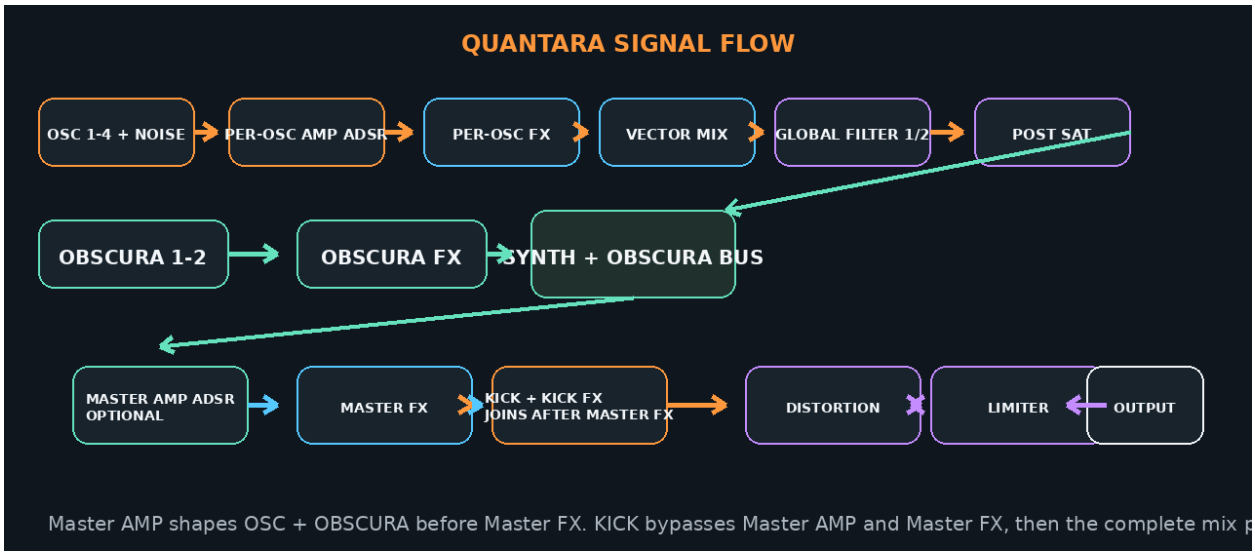
Wichtig: STORE A/B/C/D speichert Sound-Parameter, nicht die XY-Position. Nur den Pad-Punkt zu verschieben erzeugt keine andere Scene, solange die Synth-Parameter gleich bleiben.

12. MASTER FX, Master AMP ADSR, Distortion und Output

DIST / MASTER enthaelt MASTER FX, DISTORTION und OUTPUT. Die optionale Master AMP ADSR formt den kombinierten OSC+OBSCURA-Bus vor Master FX. Sie ist note-count-aware: die erste gehaltene Note startet Attack, das letzte Note-Off startet Release. Weil sie vor Master FX liegt, koennen Reverb-/Delay-Tails weiter ausklingen.

KICK bleibt von Master AMP und Master FX unabhaengig. Nach Master FX wird KICK zugemischt, danach geht das Gesamtsignal in Distortion. Zehn Modi: Clean, Warm, Tube, Diode, Acid Clip, Fold, Fuzz, Transistor, Rectifier, Hard Clip. Die Schlussstufe bietet Output, Eco/Normal/High Quality und optionalen Safety Limiter.

CONTROL	FUNKTION / VERWENDUNG
MASTER AMP ENV	Optionale note-count-aware ADSR vor Master FX.
MASTER FX	Unabhaengiges 4-Slot-Rack mit CHAIN.
DISTORTION ON / TYPE	Bypass oder einer von 10 Algorithmen.
DRIVE / TONE / MIX / LEVEL	Amount, Tone, Dry/Wet und Output-Trim.
OUTPUT	Finaler Pegel -24 dB bis +6 dB.
QUALITY	Eco, Normal oder High.
SAFETY LIMITER	Optionale Peak-Schutzstufe.



Distortion-Modi

Clean / Warm / Tube / Diode / Acid Clip / Fold / Fuzz / Transistor / Rectifier / Hard Clip

13. MIDI, Automation und Live-Feedback

MIDI Pitch Bend arbeitet global mit +/-2 Halbtönen fuer OSC 1-4 und Piano-Roll-Stimmen. Mod Wheel CC1 erzeugt Performance-Vibrato mit etwa 5.5 Hz und bis zu +/-50 Cent. Reset All Controllers setzt beides neutral. Diese Hardware-Zustaende ueberschreiben keine Preset/APVTS-Werte.

Die meisten kontinuierlichen Controls sind host-automatisierbar. ENV/LFO, ORBIT und Scene Morph legen Modulation ueber den Basiswert, statt ihn destruktiv zu aendern. Preset/Automation behalten die Basis; der effektive Wert kann sich darum bewegen.

14. Fehlerbehebung, CPU und sicherer Workflow

Kein Sound im Wavetable-Modus bedeutet meist: keine gueltige externe WAV/WAVE ausgewaehlt. Datei in den installierten Wavetables-Ordner legen, REFRESH WAVES druecken und neu waehlen. Presets speichern relative Pfade und suchen strikt innerhalb dieser Library.

Bei hoher CPU zuerst Unison, OBSCURA Overlap/Density, lange Reverbs und aktive FX reduzieren. Quality beim Design von High auf Normal oder Eco setzen und bei Bedarf fuer den finalen Render wieder High waehlen.

Bei Preset-Problemen INIT nutzen. Jeder gueltige Load beginnt mit INIT und bleibt waehrend der Rekonstruktion stumm; fehlt eine benoetigte Wavetable, bleibt QUANTARA sauber statt Teile des vorherigen Sounds zu behalten.

Symptom	Ursache / Aktion
No sound in Wavetable	Select a valid external WAV/WAVE or switch to Saw/Square/Sine/Triangle.
Preset fails to recall	Check required external wavetable path; QUANTARA remains on clean INIT on failure.
Too much CPU	Reduce unison, OBSCURA overlap/density, active FX, long reverbs; lower Quality.
Unexpected FX routing	Check CHAIN 1->2 / 2->3 / 3->4; OFF starts a parallel branch.
Scene Morph seems inactive	Capture genuinely different synth states into A/B/C/D, then enable Scene Morph.
ORBIT moves sound but knob base value stays	Normal: base/automation remains static while live pointer shows effective modulation.

15. Praktische Sound-Design-Rezepte

Cinematic Motion: zwei kontrastierende externe Wavetables auf OSC 1/3, lange AMP Releases, moderate Resonanz und lange Reverb in einem Parallelzweig. ORBIT RADIUS -> Filter 1 Cutoff, SPEED -> OSC 1 WT POS, ANGLE -> Reverb-Parameter. Min/Max zuerst eng setzen.

Moderner Bass: ein OSC fuer Fundamental, zweiter OSC eine Oktave oder Quinte hoeher, moderates Unison, Filter 1 Low-Pass mit Drive und kurze AMP-Huelle. Parallel-Distortion im OSC-Rack erhaelt den sauberen Low-End-Anteil. Mod Wheel nur dezent einsetzen.

Scene-Morph-Pad: A dunkel/niedrige WT POS, B heller/breiter, C mehr Reverb und langsame Huelle, D trockener/kuerzer. Scene Morph aktivieren und X/Y automatisieren oder ORBIT auf Scene X/Y routen.

QUANTARA V0.9.9.0.78

De UI-labels worden exact weergegeven zoals ze in QUANTARA staan. Technische termen zoals WT POS, ORBIT en CHAIN blijven daarom bewust in het Engels.

1. Aan de slag en workspace-overzicht

QUANTARA is een hybride Windows x64 VST3-synthesizer met vier onafhankelijke oscillatorlanes, twee spectrale/granulaire OBSCURA-engines, een aparte gesynthetiseerde KICK-engine, twee globale filters, vijf envelopes, vijf LFOs, ORBIT, VECTOR, Scene Morph en onafhankelijke 4-slot FX-racks. Deze handleiding beschrijft V0.9.9.0.78 en preset schema 25.

De plug-in opent op 1280 x 740 en schaalt proportioneel tot 2000 x 1157. De zichtbare hoofdnavigatie is PRESETS, PERFORMANCE, OSC, OBSCURA, KICK, ORBIT, VECTOR en DIST / MASTER. OSC, OBSCURA, KICK en DIST / MASTER hebben eigen subpagina's zodat de bovenbalk compact blijft.

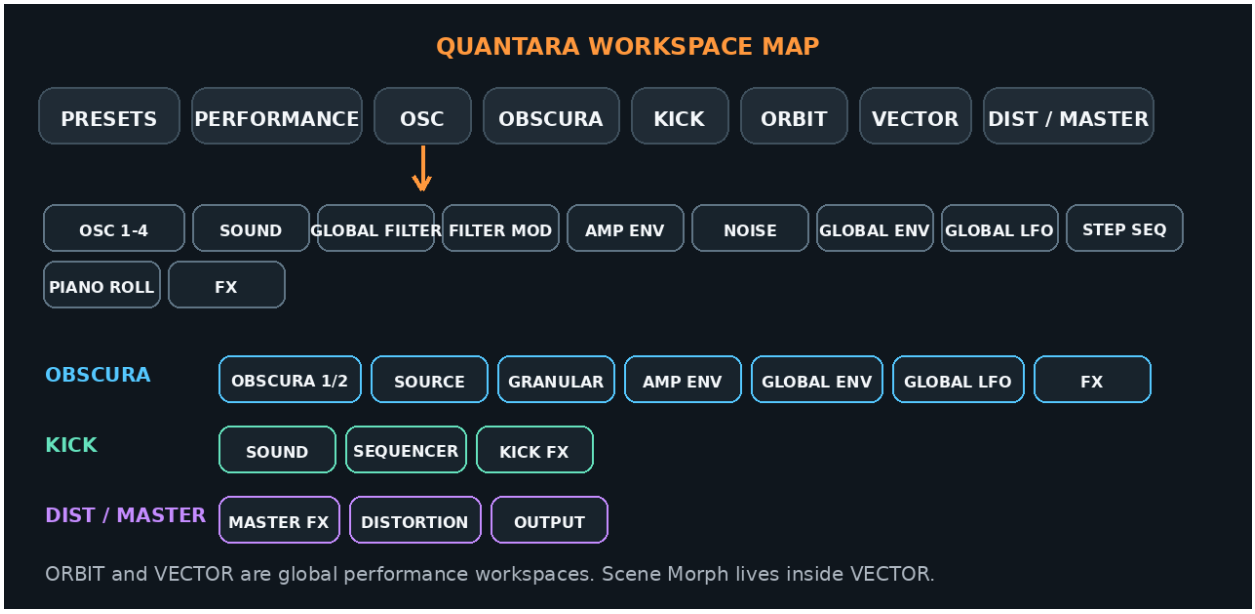
Voor een propere eerste test laad je INIT, zet je slechts één oscillator aan, kies je Saw of Square, laat je optionele FX en sequencers uit en speel je MIDI vanuit de DAW. Bouw daarna de patch module per module op.

Installatie en vaste locaties

VST3: C:\Program Files\Common Files\VST3\QUANTARA.vst3

Presets: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Presets

Wavetables: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Wavetables



2. Presets, INIT en contentmappen

De PRESETS-pagina is een folder-driven TFT-browser. Presets gebruiken de extensie .qpreset en schema 25. De vaste presetroot staat in de geïnstalleerde bundle: C:\Program Files\Common Files\VST3\QUANTARA.vst3\Presets. Mapnamen worden browsercategorieën.

Elke geldige preset-load is bewust INIT-first. QUANTARA mute de volledige overgang, zet eerst de propere INIT-state, herstelt daarna externe wavetables en niet-APVTS-state, en tenslotte de geselecteerde parameterstate. Zo kan niets van de vorige sound - parameters, sequencerdata, samples of modulatiecurves - blijven hangen.

SAVE SELECTED overschrijft de geselecteerde user .qpreset met de volledige huidige state en doet daarna geen reload. INIT is virtueel en kan niet worden overschreven. SAVE AS maakt een nieuwe preset. IMPORT / LOAD laadt een .qpreset van schijf. Wanneer de presetbrowser focus heeft laden pijl Omhoog/Omlaag de vorige of volgende zichtbare preset.

CONTROL	FUNCTIE / GEBRUIK
Preset browser	Mappen links, presets rechts; klik om te laden.
SAVE SELECTED	Overschrijft exact de geselecteerde user preset met de volledige state; INIT is beschermd.

CONTROL	FUNCTIE / GEBRUIK
SAVE AS	Maakt een nieuwe .qpreset onder een nieuwe naam/locatie.
IMPORT / LOAD	Laadt een .qpreset via de INIT-first route.
REFRESH	Scant de vaste presetlibrary opnieuw.
DELETE PRESET	Verwijdert alleen de geselecteerde .qpreset; wavetables blijven staan.
OPEN PRESET FOLDER	Opent QUANTARA.vst3\Presets.

3. PERFORMANCE-pagina

PERFORMANCE is de snelste manier om een sound te vormen zonder de diepere workspaces te openen. Het bovenste deel bevat de kern van filter/envelope/accent; onderaan staan circuitachtige calibratie en vier performance-macro's.

De macro's werken als overlays op meerdere DSP-blokken zonder de basisparameters te herschrijven. ACID verhoogt squelch en envelope/accent-interactie, DRIVE voegt saturatie en body toe, TENSION verhoogt beweging en harmonische spanning, SPACE verhoogt breedte en de wet-bijdrage van actieve FX.

CONTROL	FUNCTIE / GEBRUIK
MASTER TUNE	Globale tuning-offset in cents.
CUTOFF / RESONANCE	Helderheid van Filter 1 en resonantiepiek.
ENV MOD / DECAY	Diepte en decay van de hoofd-filterenvelope.
ACCENT	Globale accentsterkte vóór de detailrouting.
CONDITION / VCF TRIM	Circuitkarakter en fijne filtercalibratie.
ACC DECAY / ACC STACK	Accentduur en opstapeling.
SLIDE TIME	Portamentotijd voor slide/legato.
OUT ASYM	Gecontroleerde output-asymmetrie voor extra harmonischen.
ACID / DRIVE / TENSION / SPACE	Vier niet-destructieve performance-macro's die meerdere DSP-blokken beïnvloeden.

4. OSC-workspace: sound, wavetable, tuning, AMP ENV en noise

OSC 1-4 zijn volledig onafhankelijke soundlanes. Kies OSC 1 / OSC 2 / OSC 3 / OSC 4 en daarna SOUND, GLOBAL FILTER, GLOBAL FILTER MOD, AMP ENV, NOISE, GLOBAL ENV, GLOBAL LFO, STEP SEQ, PIANO ROLL of FX.

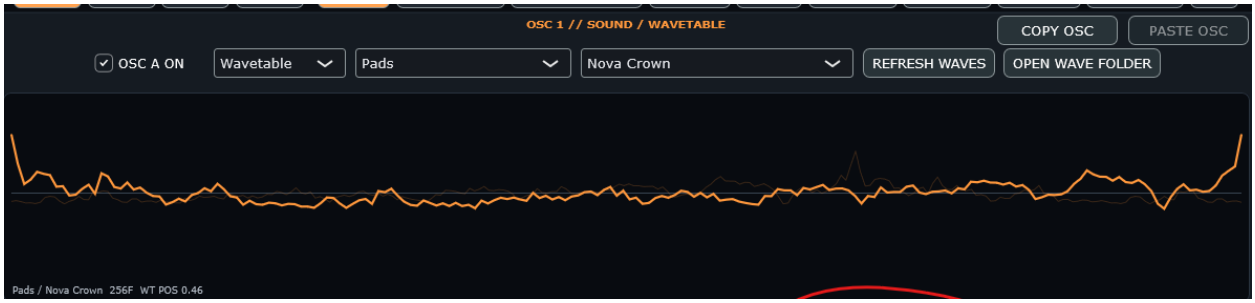
Saw, Square, Sine en Triangle worden intern gegenereerd. Wavetable-audio is uitsluitend extern. De browser scant QUANTARA.vst3\Wavetables recursief; de root verschijnt als Factory Wave Tables en submappen worden rechtstreeks categorieën. WAV en WAVE worden ondersteund. Serum-achtige tables gebruiken 2048 samples per frame en maximaal 256 frames; korte of generieke single-cycles kunnen naar het interne 2048-sample formaat worden omgezet.

WT POS is de echte framepositie die DSP en live waveform gebruiken. ENV/LFO, ORBIT en Scene Morph kunnen WT POS bewegen zonder de opgeslagen basiswaarde te overschrijven. Staat de bron op Wavetable maar is geen externe table geselecteerd, dan is die oscillator bewust stil in plaats van terug te vallen op verborgen content.

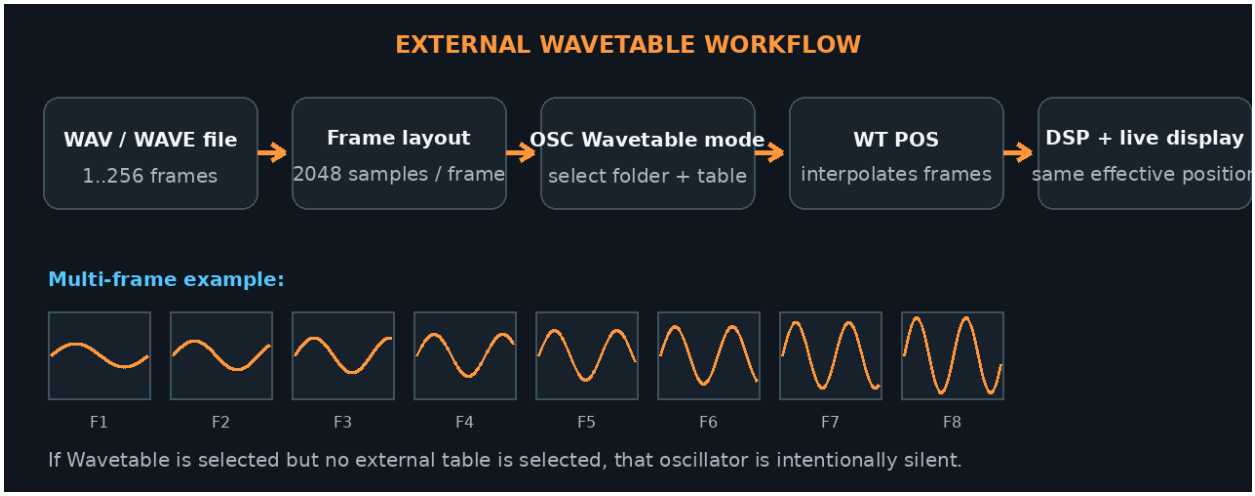
Elke oscillator heeft ook een eigen AMP ADSR met Attack, Decay en Release tot ongeveer 60 seconden, onafhankelijke octave/semitone/fine/tune, optionele unison, stereo spread, MIDI glide en een noise-generator met acht noise-types.

CONTROL	FUNCTIE / GEBRUIK
OSC ON	Zet de oscillator aan/uit zonder instellingen te verliezen.

CONTROL	FUNCTIE / GEBRUIK
SOURCE	Saw, Square, Wavetable, Sine of Triangle.
CATEGORY / TABLE	Kies map en externe WAV/WAVE-table.
REFRESH WAVES / OPEN WAVE FOLDER	Scant of opent de geïnstalleerde wavetablelibrary.
LEVEL / SEMI / FINE / WT POS	Layerniveau, grove/fijne pitch en wavetable-framepositie.
OCTAVE / TUNE	Onafhankelijke octave en tuning-offset.
UNISON / DETUNE / SPREAD	0-12 extra stemmen met detune en stereospreiding.
MIDI GLIDE	Portamento per oscillator voor verbonden noten.
AMP ADSR	VCA-envelope per OSC; Attack/Decay/Release tot ca. 60 s.
NOISE	White, Pink, Brown, Blue, Violet, Digital, Crackle of Velvet plus Level/Color/Width.



OSC SOUND / WAVETABLE - externe folderselectie en live waveform.



Wavetable-formaatdetails

Item	Specification
Extensions	.wav / .wave
Native multi-frame layout	2048 samples per frame
Frames	1-256
Morph	WT POS interpolates between adjacent frames
Short cycles	Auto-converted/resampled to 2048 samples
Browser root	Factory Wave Tables
Recall	Relative path inside QUANTARA.vst3\Wavetables

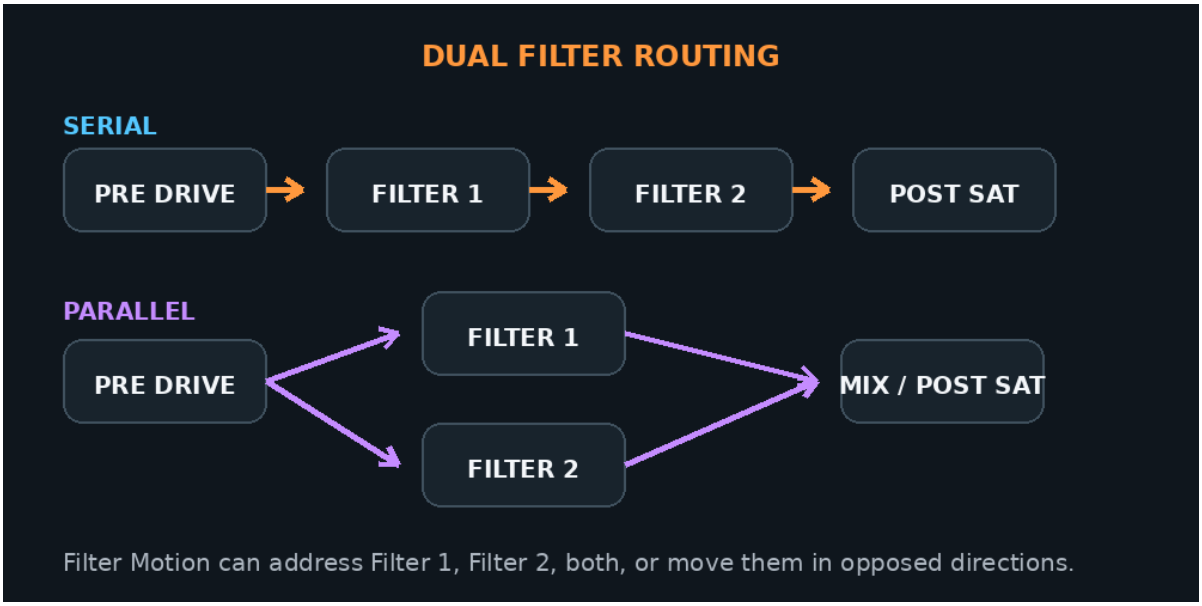
5. GLOBAL FILTER, FILTER MOD, ENV 1-5 en LFO 1-5

De filterarchitectuur is bewust globaal voor de oscillatorbus. Filter 1 kan volledig worden gebypasst en heeft tien modellen. Filter 2 is optioneel en kan SERIAL of PARALLEL werken tegenover Filter 1. Pre Drive verandert het harmonische materiaal vóór de filters; Low Body geeft gecontroleerd laag terug bij sterke resonantie/drive; Post Filter Saturation voegt densiteit toe na filtering.

GLOBAL FILTER MOD bevat een tempo-gebonden motion-generator en accent-routing. Motion kan Filter 1, Filter 2, beide samen of beide tegengesteld bewegen. Accent kan afzonderlijk naar cutoff, drive en VCA worden gestuurd.

Vijf globale envelopes en vijf globale LFOs hebben elk vier bipolaire routes. Het centrale register bevat momenteel 371 realtime-veilige destinations, waaronder oscillator tuning, WT POS, AMP-tijden, noise, filters, sequencer timing, OBSCURA, KICK, VECTOR, Scene Morph en alle continue A/B/C/D/MIX-controls van alle FX-racks. Discrete algoritmes en ON/OFF-schakelaars worden bewust niet op modulatietempo gewisseld.

CONTROL	FUNCTIE / GEBRUIK
FILTER 1 ON / MODEL	Echte bypass plus 10 filtermodellen.
CUTOFF / RESONANCE	40-16000 Hz cutoff en resonantie.
FILTER DRIVE / CHARACTER / KEY TRACK	Niet-lineaire drive, character en key tracking.
PRE DRIVE / LOW BODY	Pre-filter harmonischen en low-end versterking.
FILTER 2	Optioneel tweede filter met model/cutoff/resonance/drive/mix.
ROUTING	SERIAL: Filter 2 na Filter 1; PARALLEL: beide vanaf dezelfde input.
MOTION RATE / SHAPE / TARGET / DEPTH	Eigen tempo-motion generator voor één/beide filters.
ACC > CUTOFF / DRIVE / VCA	Onafhankelijke accent-routingdieptes.
POST FILTER SAT	Saturatie na het filter.



Filtermodellen

Reactor Diode LP / 18dB LP / 24dB Ladder LP / High Pass / Band Pass / Notch / Morph LP/BP/HP / Resonator / Comb / Formant

Globale modulatiecontrols

CONTROL	FUNCTIE / GEBRUIK
ENV 1-5 ADSR	Attack/Decay/Sustain/Release, Curve en Retrigger.
ENV DRAW MODE	Teken een eigen envelope, stel Draw Time in en loop optioneel.
LFO 1-5	Vrij 0.02-30 Hz of host-sync met 14 divisies.
LFO SHAPE	Sine, Triangle, Saw Up/Down, Square, S&H;, Smooth Random of DRAW.
ROUTE 1-4	Destination + bipolaire amount; negatieve waarden inverteren.
LIVE MOD FEEDBACK	Basiswaarde blijft opgeslagen/automatiseerbaar; effectieve pointer toont modulatie.

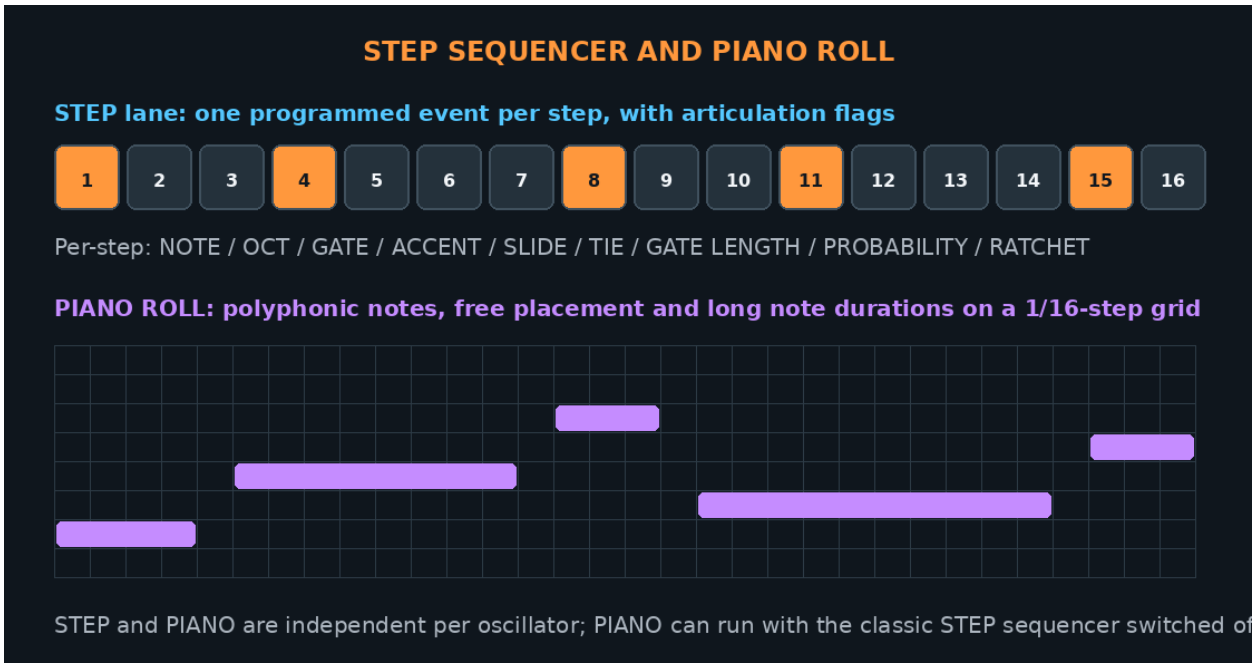
6. STEP-sequencer en PIANO ROLL

Elke oscillator heeft een eigen classic STEP-sequencer én een onafhankelijke PIANO ROLL. STEP is één event per stap met articulatie; PIANO ROLL is polyfoon en ondersteunt meerdere gelijktijdige noten en noten die veel stappen lang duren. PIANO kan draaien terwijl de classic STEP-sequencer uit staat.

Elke oscillator heeft eigen clock, host sync, tempo, division, pattern length, swing, transpose, play mode en slide time. Patternlengtes zijn 4, 8, 16, 32 of 64 stappen. STEP biedt note, octave, gate, accent, slide, tie, gate length, probability en ratchet. PIANO biedt velocity, density, octave range en maximale gegenereerde nootlengte.

GENERATE is key/scale-aware en gebruikt genre + role-regels in plaats van elke stap willekeurig te maken. Gegenereerde noten blijven binnen de gekozen toonaard/schaal. Er zijn 27 genregrammatica’s, 10 scales/modes en 11 muzikale rollen.

CONTROL	FUNCTIE / GEBRUIK
SEQ ON / PIANO ON	STEP en PIANO zijn onafhankelijk aan/uit te zetten.
HOST SYNC / TEMPO	Volg DAW-tempo of gebruik interne 40-300 BPM clock.
DIVISION	Rechte en triplet-divisies.
PATTERN LENGTH	4, 8, 16, 32 of 64 stappen.
SWING / TRANSPOSE / PLAY MODE	Groove, transpose en afspeelvolgorde.
STEP FLAGS	Gate, Accent, Slide, Tie, Gate Length, Probability en 1x-4x Ratchet.
PIANO GENERATOR	Density, octaafbereik, max nootlengte en velocity.
GENERATE	Maakt en scoort muzikale kandidaten uit Key + Scale + Genre + Role.



Generator-scales

NATURAL MINOR / MAJOR / DORIAN / PHRYGIAN / MIXOLYDIAN / HARMONIC MINOR / MELODIC MINOR / MINOR PENTATONIC / BLUES / CHROMATIC

Generator-rollen

AUTO / MONO CLASSIC / ANALOG BASS / ACID LINE / SEMI-MODULAR / ARPEGGIO / MELODIC LEAD / PLUCK / PAD MOTION / SYNTH BASS / POLYRHYTHM

Genregrammatica’s

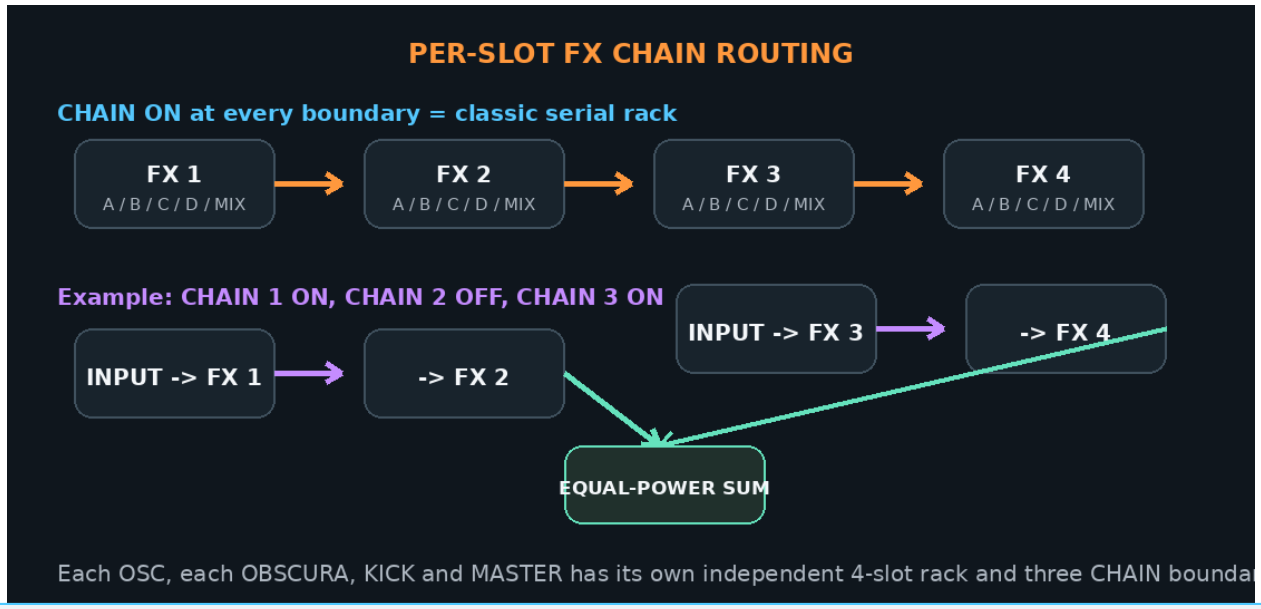
PEAK-TIME TECHNO / ACID TECHNO / HYPNOTIC TECHNO / TRANCE / HARD TECHNO / MELODIC TECHNO / PROGRESSIVE TRANCE / PSYTRANCE / HOUSE / DEEP HOUSE / TECH HOUSE / DISCO / NU-DISCO / EDM / PROG HOUSE / ELECTRO / SYNTHWAVE / POP / R&B; / FUNK / DRUM & BASS / BREAKBEAT / AMBIENT / HIP-HOP / TRAP / UK GARAGE / DUBSTEP / REGGAETON

7. Onafhankelijke 4-slot FX-racks en CHAIN-routing

QUANTARA heeft onafhankelijke 4-slot racks voor OSC 1, OSC 2, OSC 3, OSC 4, OBSCURA 1, OBSCURA 2, KICK en MASTER. Geen enkel rack deelt zijn state met een ander rack.

Elke slot heeft ON/OFF, een effectalgoritme, vier algoritme-afhankelijke parameters A/B/C/D en MIX. De labels veranderen volgens het gekozen effect: Delay gebruikt bijvoorbeeld TIME / FEEDBACK / TONE / STEREO, terwijl Hall Reverb SIZE / DECAY / DAMP / WIDTH gebruikt.

Per rack zijn er drie CHAIN-grenzen: FX1->2, FX2->3 en FX3->4. CHAIN ON stuurt de bewerkte output naar de volgende slot. CHAIN OFF start de volgende slot als parallelle branch vanaf de rack-input; actieve branches worden equal-power samengevoegd. Startup en INIT zetten alle CHAINs standaard UIT, maar schema-25 presets herstellen hun eigen opgeslagen keuzes exact.



De 36 huidige FX-algoritmes staan in Appendix A. A/B/C/D-labels veranderen dynamisch.

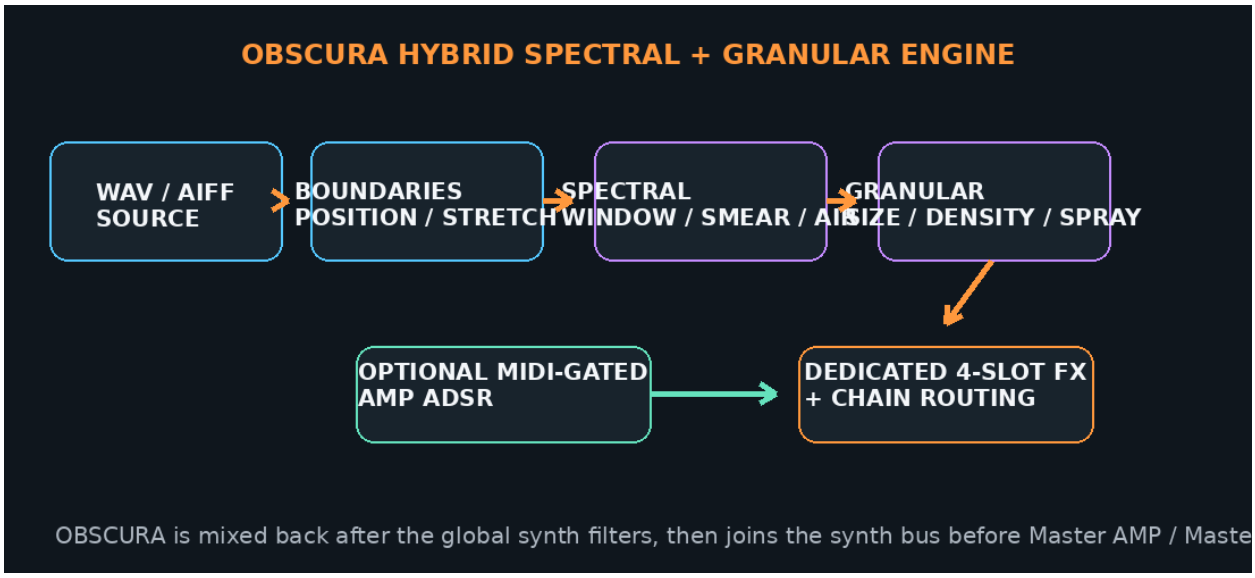
8. OBSCURA 1-2 hybride spectral + granular engines

OBSCURA 1 en 2 zijn onafhankelijke WAV/AIFF-manipulatie-engines. De spectrale engine en granular cloud kunnen samen werken. SOURCE bevat Start/End, Loop Start/End, Position, Stretch, pitch, root note, key tracking, level, pan, width en fade-gedrag.

Spectral Stretch loopt van 0.25x tot 1000x. Spectrale controls: FFT Window, Overlap, Smear, Harmonics, Air, Freeze, Phase Lock en Ping-Pong. Granular: Grain Size, Density, Spray, Pitch Spread, Stereo Spread en Reverse Grains.

OBSCURA heeft een aparte output AMP ADSR. MIDI GATE OFF behoudt continue texture-playback; MIDI GATE ON laat de output-envelope reageren op note-on/note-off. Elke OBSCURA heeft een eigen 4-slot FX-rack. De returns worden na de globale oscillatorfilters gemixt, zodat een gesloten synthfilter een doorlopende OBSCURA-texture niet dempt.

CONTROL	FUNCTIE / GEBRUIK
LOAD WAV / AIFF	Laadt bron-audio.
START / END / LOOP START / LOOP END	Bepaalt playback- en loopgrenzen.
POSITION / STRETCH	Spectrale positie en 0.25x-1000x stretch.
COARSE / FINE / ROOT / KEY TRACK	Pitchinstelling en MIDI-relatieve tuning.
LEVEL / PAN / WIDTH	Outputniveau en stereoplaatsing.
FREEZE / PHASE LOCK / PING-PONG	Freeze, Phase Lock en Ping-Pong scan.
WINDOW / OVERLAP / SMEAR / HARMONICS / AIR	Spectrale resolutie, smoothness, diffusion, harmonischen en air.
GRANULAR	Grain Size, Density, Spray, Pitch Spread, Stereo Spread en Reverse Grains.
AMP MIDI GATE + ADSR	Optionele output-VCA-envelope; OFF behoudt continue textures.



9. KICK-engine, sequencer en KICK FX

KICK is een aparte gesynthetiseerde one-shot engine, geen sampleplayer. Twintig style-profielen bepalen verschillende synthesegrammatica's, waaronder EDM, Rumble, Hardstyle, Hardcore, 808, Big Room, Techno, Industrial, Rawstyle, Gabber, Frenchcore, Trap 808 en Drum & Bass.

De soundcontrols vormen pitch drop/pitch decay, body, punch, click, click tone, drive, character, sub, rumble, rumble decay, rumble tone en eindniveau. TRIGGER laat de huidige kick horen zonder MIDI te sturen of te verbruiken.

De interne KICK-sequencer heeft 16/32/64 stappen, host sync of 40-300 BPM intern tempo, vijf divisions en swing. KICK heeft ook een eigen 4-slot FX-rack. De KICK-bus omzeilt Master AMP en Master FX, wordt erna gemixt en gaat vervolgens samen met de volledige mix door Distortion en Safety Limiter.

CONTROL	FUNCTIE / GEBRUIK
STYLE	20 syntheseprofielen.
TUNE / PITCH DROP / PITCH DECAY	Basistuning en neerwaartse pitch-envelope.
DECAY / PUNCH / BODY	Staart, punch en body.
CLICK / CLICK TONE	Clickniveau en frequentie.
DRIVE / CHARACTER / SUB	Drive, character en sub.
RUMBLE / DECAY / TONE	Aparte low-frequency rumblecomponent.
KICK SEQUENCER	16/32/64 stappen, Host Sync, Tempo, Division en Swing.
KICK FX	Onafhankelijk 4-slot rack met CHAIN.

Kick-stijlen

EDM / Rumble / Hardstyle / Hardcore / 808 / Big Room / Festival EDM / House / Tech House / Disco / Techno / Industrial / Rawstyle / Gabber / Frenchcore / Uptempo / 808 Distorted / Trap 808 / Drum & Bass / Electro

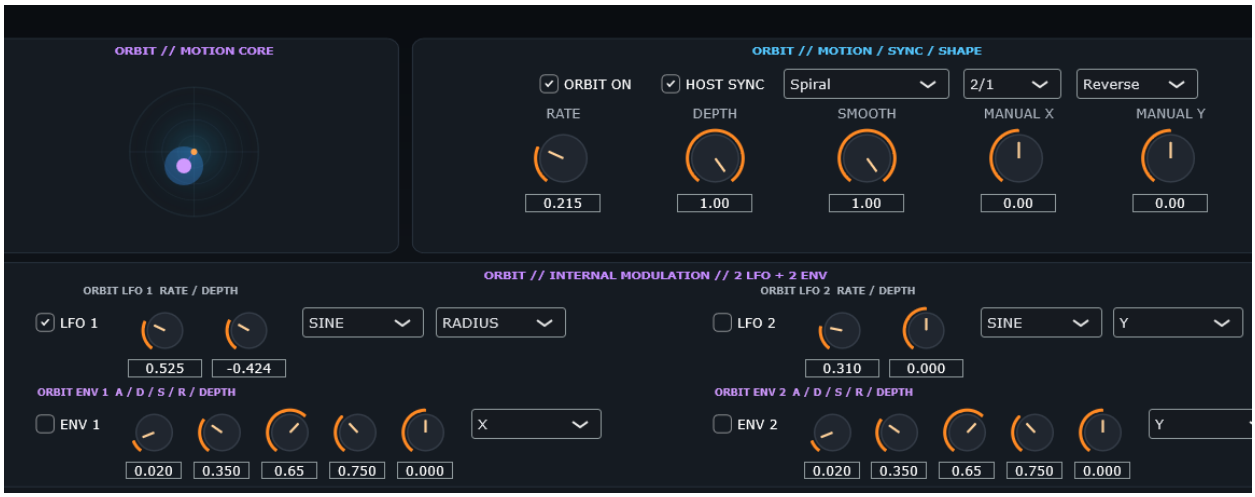
10. ORBIT motion-engine

ORBIT is een globale multi-axis performance-modulator voor evoluerende beweging. Motion modes: Manual, Circle, Ellipse, Spiral, Figure-8 en Pendulum. Timing kan free-running of host-synced zijn. Direction modes: Forward, Reverse, Ping-Pong, Alternate Cycle, Random / Cycle en Random / Note.

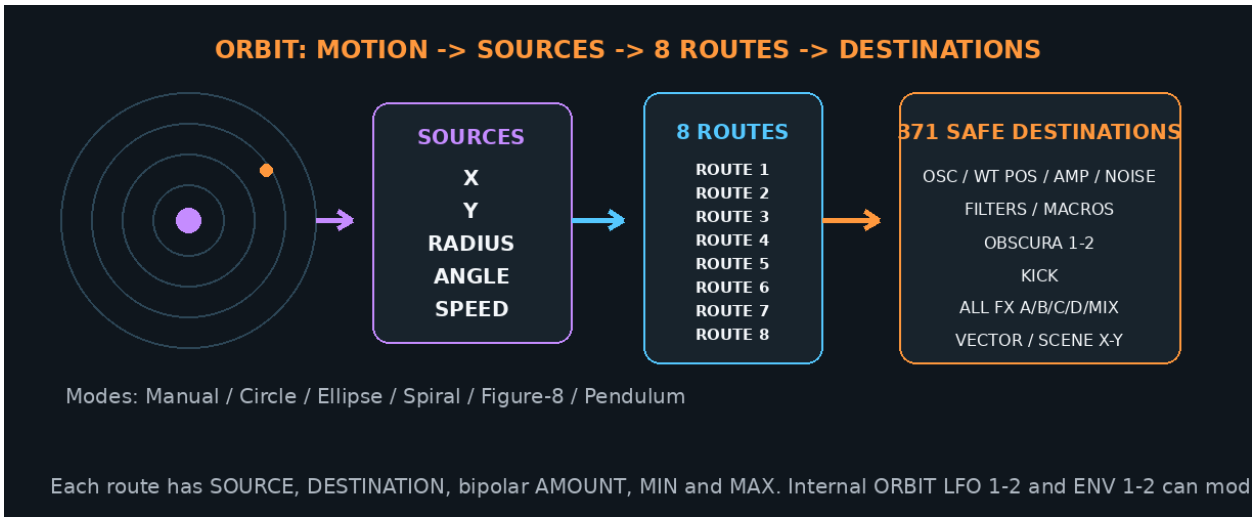
ORBIT levert vijf sources: X, Y, RADIUS, ANGLE en SPEED. Acht routes kiezen elk een source, destination, bipolaire Amount en Min/Max-venster. Omdat ORBIT het centrale register gebruikt kan het WT POS, filters, OBSCURA, KICK, FX A/B/C/D/MIX, VECTOR en Scene Morph-coördinaten bewegen.

Twee interne ORBIT LFOs en twee interne ORBIT ADSR-envelopes kunnen X, Y, RADIUS of ANGLE moduleren vóór de acht routes worden berekend. De GUI laat de host/preset-basiswaarde intact: cyan toont de opgeslagen basis, de oranje pointer toont de effectieve DSP-waarde.

CONTROL	FUNCTIE / GEBRUIK
ORBIT ON / MOTION	ORBIT aanzetten en motion mode kiezen.
HOST SYNC / RATE / DIVISION	Vrije snelheid of DAW-gesynchroniseerde division.
DIRECTION	Zes direction modes.
DEPTH / SMOOTH / MANUAL X/Y	Totale diepte, smoothing en manuele coördinaten.
SOURCE	Elke route leest X, Y, RADIUS, ANGLE of SPEED.
DESTINATION / AMOUNT / MIN / MAX	Destination, bipolaire depth en Min/Max voor 8 routes.
ORBIT LFO 1-2	Interne LFOs voor X/Y/RADIUS/ANGLE.
ORBIT ENV 1-2	Interne ADSRs voor X/Y/RADIUS/ANGLE.



ORBIT-workspace - motion core en 2 interne LFO + 2 ENV.



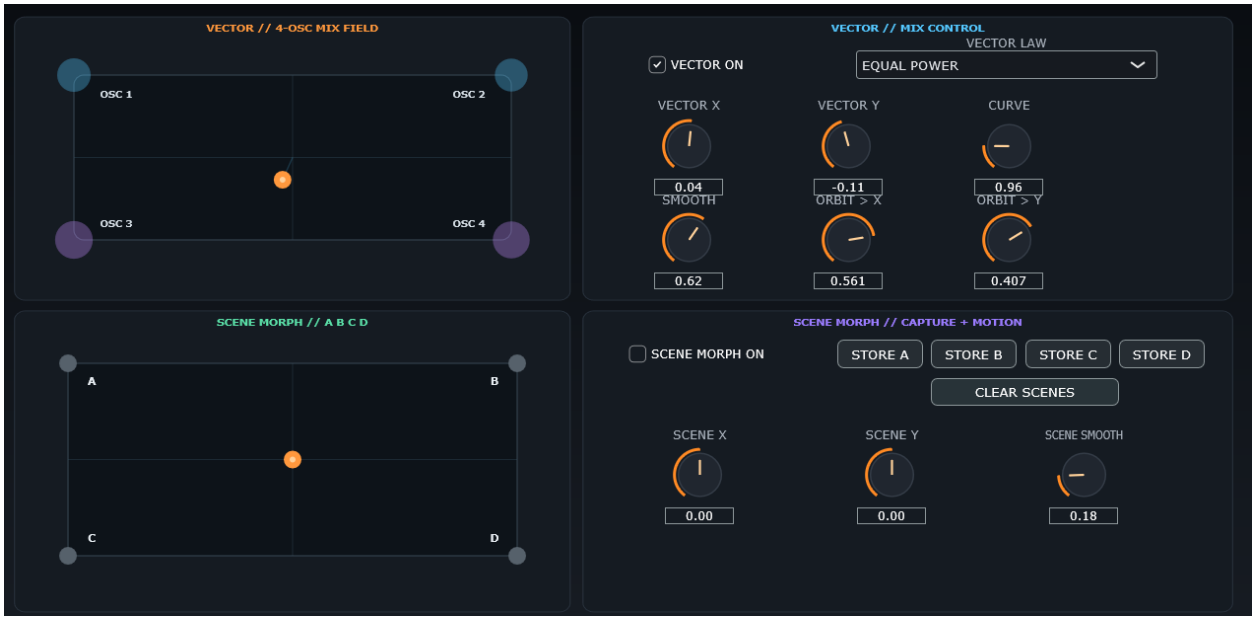
11. VECTOR-mixer en SCENE MORPH A/B/C/D

VECTOR is een vierhoeksmixer uitsluitend voor OSC 1-4. A = OSC 1 linksboven, B = OSC 2 rechtsboven, C = OSC 3 linksonder, D = OSC 4 rechtsonder. BILINEAR en EQUAL POWER zijn beschikbaar, plus Curve en Smoothing. ORBIT kan via ORBIT > X/Y in VECTOR worden geïnjecteerd.

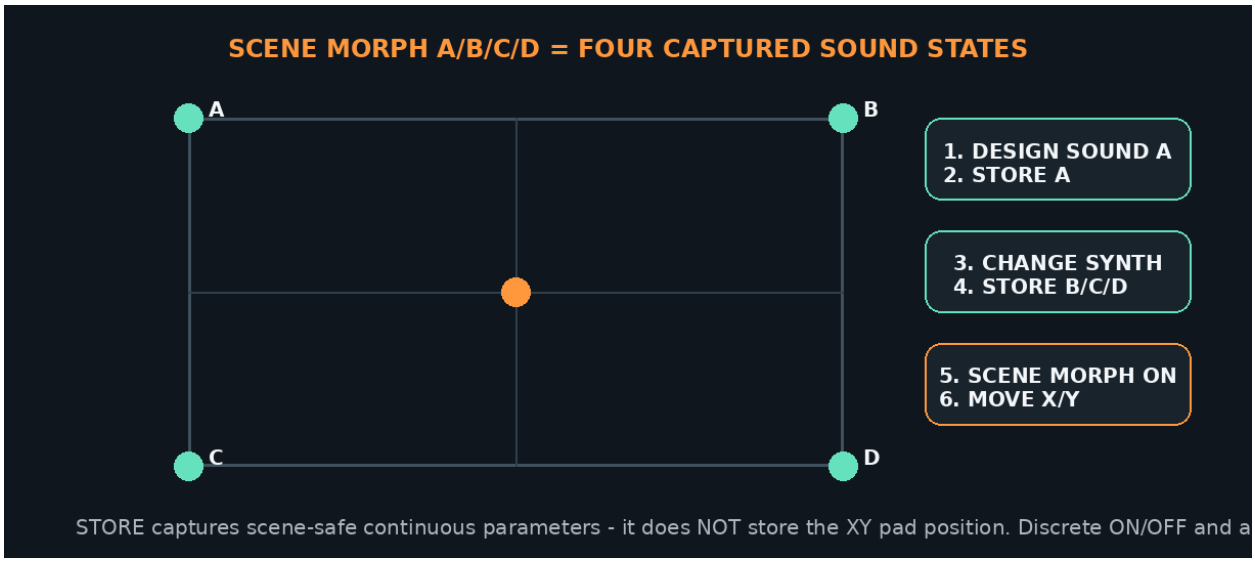
SCENE MORPH is een apart vier-snapshot systeem in dezelfde workspace. STORE A/B/C/D bewaart de huidige scene-safe continue parameters - niet de padpositie. Correcte workflow: ontwerp sound A -> STORE A; verander de synth echt -> STORE B; herhaal C/D; zet SCENE MORPH ON; beweeg daarna Scene X/Y.

Alleen veilige continue parameters worden geïnterpoleerd. Discrete keuzes zoals FX type, waveform en ON/OFF blijven op hun base state. Volgorde: BASE -> SCENE MORPH -> ENV/LFO -> ORBIT. Scene X/Y zijn zelf modulation destinations, waardoor ORBIT automatisch door de vier scenes kan bewegen.

CONTROL	FUNCTIE / GEBRUIK
VECTOR ON	Zet vier-OSC XY-mixing aan.
VECTOR LAW	BILINEAR of EQUAL POWER.
VECTOR X / Y	Manuele positie in het OSC-mixveld.
CURVE / SMOOTH	Crossfadecurve en smoothing.
ORBIT > X / Y	Injecteert ORBIT in VECTOR X/Y.
STORE A/B/C/D	Bewaart scene-safe continue parameters in vier snapshots.
SCENE MORPH ON / X / Y / SMOOTH	Activeert en navigeert de vier opgeslagen states.
CLEAR SCENES	Wist scenes zonder de huidige base sound te veranderen.



VECTOR + Scene Morph-workspace. De bovenbalk is weggecropt zodat de controls centraal staan.



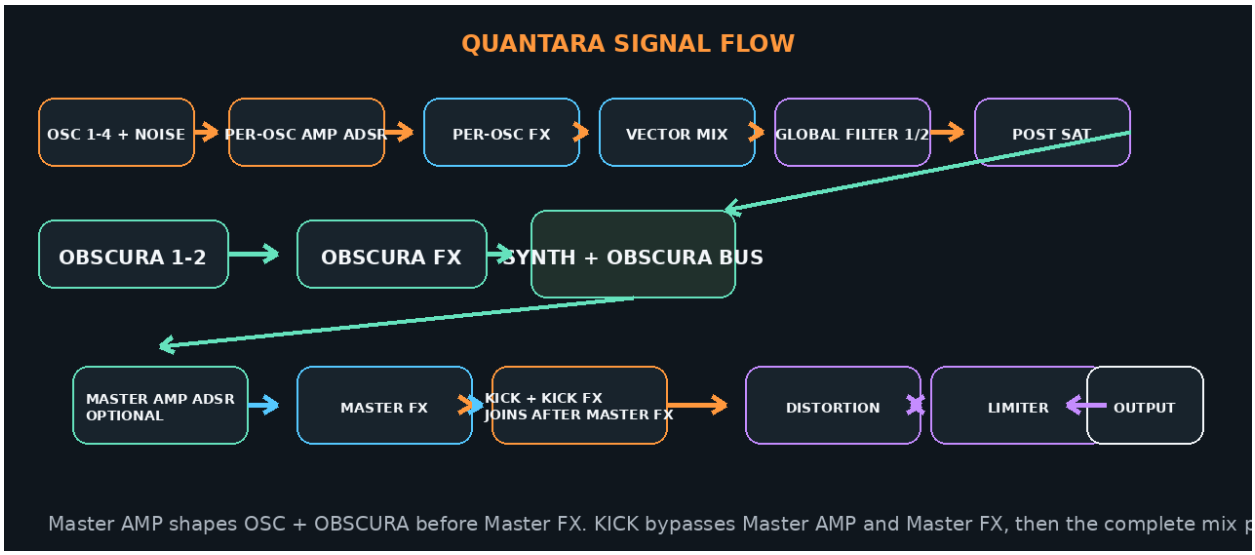
Belangrijk: STORE A/B/C/D bewaart sound-state parameters, niet de XY-positie. Alleen het padpunt verplaatsen maakt geen andere scene zolang de synthparameters hetzelfde blijven.

12. MASTER FX, Master AMP ADSR, Distortion en output

DIST / MASTER bevat MASTER FX, DISTORTION en OUTPUT. De optionele Master AMP ADSR vormt de gecombineerde OSC+OBSCURA-bus vóór Master FX. Hij is note-count aware: de eerste ingedrukte noot start Attack, de laatste note-off start Release. Omdat hij vóór Master FX staat, kunnen reverb- en delaytails natuurlijk uitklinken.

KICK blijft onafhankelijk van Master AMP en Master FX. Na Master FX wordt KICK bijgemengd en daarna gaat de volledige mix door Distortion. Er zijn tien modes: Clean, Warm, Tube, Diode, Acid Clip, Fold, Fuzz, Transistor, Rectifier en Hard Clip. De eindtrap bevat Output, Eco/Normal/High quality en optionele Safety Limiter.

CONTROL	FUNCTIE / GEBRUIK
MASTER AMP ENV	Optionele note-count-aware ADSR vóór Master FX.
MASTER FX	Onafhankelijk 4-slot rack met CHAIN.
DISTORTION ON / TYPE	Bypass of kies één van 10 algoritmes.
DRIVE / TONE / MIX / LEVEL	Amount, tone, dry/wet en post-distortion trim.
OUTPUT	Eindniveau -24 dB tot +6 dB.
QUALITY	Eco, Normal of High.
SAFETY LIMITER	Optionele eind-piekbeveiliging.



Distortion-modes

Clean / Warm / Tube / Diode / Acid Clip / Fold / Fuzz / Transistor / Rectifier / Hard Clip

13. MIDI, automation en live visuele feedback

MIDI Pitch Bend is globaal +/-2 semitonen voor OSC 1-4 en Piano Roll-voices. Mod Wheel CC1 voegt performance-vibrato toe rond 5.5 Hz met maximaal +/-50 cents. Reset All Controllers zet beide neutraal. Deze hardware-wheel states overschrijven geen preset/APVTS-waarden.

De meeste continue controls zijn host-automatiseerbaar. ENV/LFO, ORBIT en Scene Morph leggen overlays bovenop de basisparameter in plaats van hem destructief te herschrijven. Preset of DAW-automation bewaart dus de base value terwijl de effectieve DSP-waarde eromheen kan bewegen.

14. Troubleshooting, CPU en veilige workflow

Geen sound in Wavetable betekent meestal dat Wavetable als bron actief is maar geen geldige externe WAV/WAVE geselecteerd is. Plaats de file in de geïnstalleerde Wavetables-map, druk REFRESH WAVES en selecteer hem opnieuw. Presets bewaren relatieve paden en proberen strikt binnen dezelfde librarystructuur te relocaten.

Bij hoge CPU: verlaag eerst unison, OBSCURA overlap/density, lange reverbs en het aantal actieve FX. Zet Quality tijdens sounddesign van High naar Normal of Eco en ga indien nodig terug naar High voor de finale render.

Bij presetproblemen laad INIT om de engine neutraal te testen. Elke geldige preset-load start eerst vanuit INIT en blijft tijdens de reconstructie gemute; ontbreekt een vereiste wavetable, dan blijft QUANTARA proper in plaats van een deel van de vorige sound te behouden.

Symptoom	Waarschijnlijke oorzaak / actie
No sound in Wavetable	Select a valid external WAV/WAVE or switch to Saw/Square/Sine/Triangle.
Preset fails to recall	Check required external wavetable path; QUANTARA remains on clean INIT on failure.
Too much CPU	Reduce unison, OBSCURA overlap/density, active FX, long reverbs; lower Quality.
Unexpected FX routing	Check CHAIN 1->2 / 2->3 / 3->4; OFF starts a parallel branch.
Scene Morph seems inactive	Capture genuinely different synth states into A/B/C/D, then enable Scene Morph.
ORBIT moves sound but knob base value stays	Normal: base/automation remains static while live pointer shows effective modulation.

15. Praktische sounddesign-recepten

Cinematic motion: gebruik twee contrasterende externe wavetables op OSC 1 en OSC 3, lange AMP releases, matige filterresonantie en een lange reverb in een parallelle FX-branch. Route ORBIT RADIUS naar Filter 1 Cutoff, SPEED naar OSC 1 WT POS en ANGLE naar een reverbparameter. Begin met smalle Min/Max.

Moderne bass: één OSC voor de grondtoon, een tweede een octaaf of kwint hoger, matige unison, Filter 1 low-pass met drive en een korte AMP-envelope. Voeg parallelle distortion toe in het OSC-rack zodat het cleane laag behouden blijft. Gebruik Mod Wheel-vibrato subtiel.

Scene Morph pad: capture A donker/lage WT POS, B helderder/breder, C met meer reverb en tragere envelope, D droger/korter. Zet Scene Morph aan en automatiseer X/Y of route ORBIT naar Scene X/Y voor lange evolutie.

APPENDIX A - 36 FX ALGORITHMS / ALGORITMOS / ALGORITHMEN / ALGORITMES

All eight FX racks use the same curated 36-algorithm bank. The four middle columns are the exact dynamic A/B/C/D labels shown in the UI. MIX is always the dry/wet control.

#	ALGORITHM	A	B	C	D
1	Delay / Stereo	TIME	FEEDBACK	TONE	STEREO
2	Delay / Ping Pong	TIME	FEEDBACK	TONE	CROSS
3	Echo / Tape	TIME	FEEDBACK	AGE	WOW
4	Echo / Dub	TIME	FEEDBACK	DARK	DRIVE
5	Echo / Multi Tap	TIME	FEEDBACK	SPREAD	TONE
6	Echo / Diffusion	TIME	FEEDBACK	DIFFUSE	TONE
7	Reverb / Room	SIZE	DECAY	DAMP	WIDTH
8	Reverb / Plate	SIZE	DECAY	DAMP	WIDTH
9	Reverb / Hall	SIZE	DECAY	DAMP	WIDTH
10	Reverb / Dark Hall	SIZE	DECAY	DARK	WIDTH
11	Reverb / Infinite Space	SIZE	DECAY	DAMP	MOTION
12	Mod / Chorus	RATE	DEPTH	TONE	WIDTH
13	Mod / Ensemble	RATE	DEPTH	VOICES	WIDTH
14	Mod / Dimension	RATE	DEPTH	COLOR	WIDTH
15	Mod / Flanger	RATE	DEPTH	FEEDBACK	WIDTH
16	Mod / Through-Zero Flanger	RATE	DEPTH	FEEDBACK	WIDTH
17	Mod / Phaser 4	RATE	DEPTH	FEEDBACK	STEREO
18	Mod / Phaser 8	RATE	DEPTH	FEEDBACK	STEREO
19	Mod / Tremolo	RATE	DEPTH	SHAPE	PHASE
20	Mod / Auto Pan	RATE	DEPTH	SHAPE	WIDTH
21	Mod / Ring Mod	FREQ	DEPTH	BIAS	STEREO
22	Filter / Low Pass	CUTOFF	RESO	DRIVE	TONE
23	Filter / High Pass	CUTOFF	RESO	DRIVE	TONE
24	Filter / Band Pass	CUTOFF	RESO	DRIVE	WIDTH
25	Filter / Acid	CUTOFF	RESO	DRIVE	MOTION
26	Drive / Tape	DRIVE	BIAS	TONE	OUTPUT
27	Drive / Tube	DRIVE	ASYM	TONE	OUTPUT
28	Drive / Diode	DRIVE	ASYM	TONE	OUTPUT
29	Drive / Wavefolder	DRIVE	FOLDS	BIAS	TONE
30	Drive / Soft Clip	DRIVE	SHAPE	TONE	OUTPUT
31	Digital / Bit Crusher	BITS	DITHER	TONE	DRIVE
32	Digital / Sample Reducer	RATE	SMOOTH	TONE	JITTER
33	Space / Micro Shift	DETUNE	DELAY	TONE	WIDTH
34	Space / Stereo Widener	WIDTH	BASS MONO	TONE	HAAS
35	Dynamics / Bus Compressor	THRESH	RATIO	ATTACK	RELEASE
36	Dynamics / Transient Designer	ATTACK	SUSTAIN	SPEED	OUTPUT

APPENDIX B - MODULATION DESTINATIONS

Current central registry: 371 safe real-time destinations. ENV 1-5, LFO 1-5 and ORBIT share this destination system; Scene Morph X/Y are appended without shifting previous destination indices.

MASTER TUNE	OSC 1 TUNE	FILTER 1 CUTOFF	FILTER 1 RESONANCE
FILTER 1 ENV MOD	FILTER ENV DECAY	ACCENT	CONDITION
VCF TRIM	ACCENT DECAY	ACCENT STACK	SLIDE TIME
OUTPUT ASYMMETRY	MACRO ACID	MACRO DRIVE	MACRO TENSION
MACRO SPACE	OSC 1 LEVEL	OSC 1 SEMITONE	OSC 1 FINE
OSC 1 WT POS	OSC 2 LEVEL	OSC 2 SEMITONE	OSC 2 FINE
OSC 2 WT POS	OSC 3 LEVEL	OSC 3 SEMITONE	OSC 3 FINE
OSC 3 WT POS	OSC 4 LEVEL	OSC 4 SEMITONE	OSC 4 FINE
OSC 4 WT POS	OSC 1 UNISON VOICES	OSC 1 UNISON DETUNE	OSC 1 UNISON SPREAD
OSC 1 MIDI GLIDE	FILTER 1 DRIVE	FILTER 1 KEY TRACK	FILTER 1 CHARACTER
PRE DRIVE	LOW BODY	FILTER 2 CUTOFF	FILTER 2 RESONANCE
FILTER 2 DRIVE	FILTER 2 MIX	FILTER MOTION DEPTH	FILTER 2 ENV MOD
FILTER 2 KEY TRACK	ACCENT TO CUTOFF	ACCENT TO DRIVE	ACCENT TO VCA
POST FILTER SAT	SEQ 1 TEMPO	SEQ 1 SWING	SEQ 1 TRANSPOSE
SEQ 2 TEMPO	SEQ 2 SWING	SEQ 2 TRANSPOSE	SEQ 2 SLIDE TIME
SEQ 3 TEMPO	SEQ 3 SWING	SEQ 3 TRANSPOSE	SEQ 3 SLIDE TIME
SEQ 4 TEMPO	SEQ 4 SWING	SEQ 4 TRANSPOSE	SEQ 4 SLIDE TIME
MASTER DIST DRIVE	MASTER DIST TONE	MASTER DIST MIX	MASTER DIST LEVEL
MASTER OUTPUT	MASTER AMP ATTACK	MASTER AMP DECAY	MASTER AMP SUSTAIN
MASTER AMP RELEASE	OBSCURA 1 LEVEL	OBSCURA 1 POSITION	OBSCURA 1 STRETCH
OBSCURA 1 COARSE	OBSCURA 1 PAN	OBSCURA 1 WIDTH	OBSCURA 1 GRAIN SIZE
OBSCURA 1 DENSITY	OBSCURA 1 SPRAY	OBSCURA 1 PITCH SPREAD	OBSCURA 1 STEREO SPREAD
OBSCURA 1 FFT WINDOW	OBSCURA 1 OVERLAP	OBSCURA 1 SPECTRAL SMEAR	OBSCURA 1 HARMONICS
OBSCURA 1 AIR	OBSCURA 2 LEVEL	OBSCURA 2 POSITION	OBSCURA 2 STRETCH
OBSCURA 2 COARSE	OBSCURA 2 PAN	OBSCURA 2 WIDTH	OBSCURA 2 GRAIN SIZE
OBSCURA 2 DENSITY	OBSCURA 2 SPRAY	OBSCURA 2 PITCH SPREAD	OBSCURA 2 STEREO SPREAD
OBSCURA 2 FFT WINDOW	OBSCURA 2 OVERLAP	OBSCURA 2 SPECTRAL SMEAR	OBSCURA 2 HARMONICS
OBSCURA 2 AIR	MASTER FX 1 A	MASTER FX 1 B	MASTER FX 1 C
MASTER FX 1 D	MASTER FX 1 MIX	MASTER FX 2 A	MASTER FX 2 B
MASTER FX 2 C	MASTER FX 2 D	MASTER FX 2 MIX	MASTER FX 3 A
MASTER FX 3 B	MASTER FX 3 C	MASTER FX 3 D	MASTER FX 3 MIX
MASTER FX 4 A	MASTER FX 4 B	MASTER FX 4 C	MASTER FX 4 D
MASTER FX 4 MIX	OSC 1 TUNE	OSC 1 OCTAVE	OSC 1 UNISON VOICES
OSC 1 UNISON DETUNE	OSC 1 UNISON SPREAD	OSC 1 MIDI GLIDE	OSC 1 AMP ATTACK
OSC 1 AMP DECAY	OSC 1 AMP SUSTAIN	OSC 1 AMP RELEASE	OSC 1 NOISE LEVEL
OSC 1 NOISE COLOR	OSC 1 NOISE WIDTH	OSC 2 TUNE	OSC 2 OCTAVE
OSC 2 UNISON VOICES	OSC 2 UNISON DETUNE	OSC 2 UNISON SPREAD	OSC 2 MIDI GLIDE
OSC 2 AMP ATTACK	OSC 2 AMP DECAY	OSC 2 AMP SUSTAIN	OSC 2 AMP RELEASE
OSC 2 NOISE LEVEL	OSC 2 NOISE COLOR	OSC 2 NOISE WIDTH	OSC 3 TUNE
OSC 3 OCTAVE	OSC 3 UNISON VOICES	OSC 3 UNISON DETUNE	OSC 3 UNISON SPREAD
OSC 3 MIDI GLIDE	OSC 3 AMP ATTACK	OSC 3 AMP DECAY	OSC 3 AMP SUSTAIN
OSC 3 AMP RELEASE	OSC 3 NOISE LEVEL	OSC 3 NOISE COLOR	OSC 3 NOISE WIDTH
OSC 4 TUNE	OSC 4 OCTAVE	OSC 4 UNISON VOICES	OSC 4 UNISON DETUNE
OSC 4 UNISON SPREAD	OSC 4 MIDI GLIDE	OSC 4 AMP ATTACK	OSC 4 AMP DECAY
OSC 4 AMP SUSTAIN	OSC 4 AMP RELEASE	OSC 4 NOISE LEVEL	OSC 4 NOISE COLOR
OSC 4 NOISE WIDTH	FILTER MOTION RATE	VECTOR X	VECTOR Y
VECTOR ORBIT X	VECTOR ORBIT Y	VECTOR SMOOTHING	VECTOR CURVE
KICK TUNE	KICK PITCH DROP	KICK PITCH DECAY	KICK DECAY
KICK PUNCH	KICK BODY	KICK CLICK	KICK CLICK TONE
KICK DRIVE	KICK CHARACTER	KICK SUB	KICK RUMBLE
KICK RUMBLE DECAY	KICK RUMBLE TONE	KICK LEVEL	KICK SEQ TEMPO
KICK SEQ SWING	OBSCURA 1 START	OBSCURA 1 END	OBSCURA 1 LOOP START
OBSCURA 1 LOOP END	OBSCURA 1 FINE	OBSCURA 1 ROOT NOTE	OBSCURA 1 ATTACK

OBSCURA 1 RELEASE	OBSCURA 1 AMP ATTACK	OBSCURA 1 AMP DECAY	OBSCURA 1 AMP SUSTAIN
OBSCURA 1 AMP RELEASE	OBSCURA 2 START	OBSCURA 2 END	OBSCURA 2 LOOP START
OBSCURA 2 LOOP END	OBSCURA 2 FINE	OBSCURA 2 ROOT NOTE	OBSCURA 2 ATTACK
OBSCURA 2 RELEASE	OBSCURA 2 AMP ATTACK	OBSCURA 2 AMP DECAY	OBSCURA 2 AMP SUSTAIN
OBSCURA 2 AMP RELEASE	OSC 1 FX 1 A	OSC 1 FX 1 B	OSC 1 FX 1 C
OSC 1 FX 1 D	OSC 1 FX 1 MIX	OSC 1 FX 2 A	OSC 1 FX 2 B
OSC 1 FX 2 C	OSC 1 FX 2 D	OSC 1 FX 2 MIX	OSC 1 FX 3 A
OSC 1 FX 3 B	OSC 1 FX 3 C	OSC 1 FX 3 D	OSC 1 FX 3 MIX
OSC 1 FX 4 A	OSC 1 FX 4 B	OSC 1 FX 4 C	OSC 1 FX 4 D
OSC 1 FX 4 MIX	OSC 2 FX 1 A	OSC 2 FX 1 B	OSC 2 FX 1 C
OSC 2 FX 1 D	OSC 2 FX 1 MIX	OSC 2 FX 2 A	OSC 2 FX 2 B
OSC 2 FX 2 C	OSC 2 FX 2 D	OSC 2 FX 2 MIX	OSC 2 FX 3 A
OSC 2 FX 3 B	OSC 2 FX 3 C	OSC 2 FX 3 D	OSC 2 FX 3 MIX
OSC 2 FX 4 A	OSC 2 FX 4 B	OSC 2 FX 4 C	OSC 2 FX 4 D
OSC 2 FX 4 MIX	OSC 3 FX 1 A	OSC 3 FX 1 B	OSC 3 FX 1 C
OSC 3 FX 1 D	OSC 3 FX 1 MIX	OSC 3 FX 2 A	OSC 3 FX 2 B
OSC 3 FX 2 C	OSC 3 FX 2 D	OSC 3 FX 2 MIX	OSC 3 FX 3 A
OSC 3 FX 3 B	OSC 3 FX 3 C	OSC 3 FX 3 D	OSC 3 FX 3 MIX
OSC 3 FX 4 A	OSC 3 FX 4 B	OSC 3 FX 4 C	OSC 3 FX 4 D
OSC 3 FX 4 MIX	OSC 4 FX 1 A	OSC 4 FX 1 B	OSC 4 FX 1 C
OSC 4 FX 1 D	OSC 4 FX 1 MIX	OSC 4 FX 2 A	OSC 4 FX 2 B
OSC 4 FX 2 C	OSC 4 FX 2 D	OSC 4 FX 2 MIX	OSC 4 FX 3 A
OSC 4 FX 3 B	OSC 4 FX 3 C	OSC 4 FX 3 D	OSC 4 FX 3 MIX
OSC 4 FX 4 A	OSC 4 FX 4 B	OSC 4 FX 4 C	OSC 4 FX 4 D
OSC 4 FX 4 MIX	OBSCURA 1 FX 1 A	OBSCURA 1 FX 1 B	OBSCURA 1 FX 1 C
OBSCURA 1 FX 1 D	OBSCURA 1 FX 1 MIX	OBSCURA 1 FX 2 A	OBSCURA 1 FX 2 B
OBSCURA 1 FX 2 C	OBSCURA 1 FX 2 D	OBSCURA 1 FX 2 MIX	OBSCURA 1 FX 3 A
OBSCURA 1 FX 3 B	OBSCURA 1 FX 3 C	OBSCURA 1 FX 3 D	OBSCURA 1 FX 3 MIX
OBSCURA 1 FX 4 A	OBSCURA 1 FX 4 B	OBSCURA 1 FX 4 C	OBSCURA 1 FX 4 D
OBSCURA 1 FX 4 MIX	OBSCURA 2 FX 1 A	OBSCURA 2 FX 1 B	OBSCURA 2 FX 1 C
OBSCURA 2 FX 1 D	OBSCURA 2 FX 1 MIX	OBSCURA 2 FX 2 A	OBSCURA 2 FX 2 B
OBSCURA 2 FX 2 C	OBSCURA 2 FX 2 D	OBSCURA 2 FX 2 MIX	OBSCURA 2 FX 3 A
OBSCURA 2 FX 3 B	OBSCURA 2 FX 3 C	OBSCURA 2 FX 3 D	OBSCURA 2 FX 3 MIX
OBSCURA 2 FX 4 A	OBSCURA 2 FX 4 B	OBSCURA 2 FX 4 C	OBSCURA 2 FX 4 D
OBSCURA 2 FX 4 MIX	KICK FX 1 A	KICK FX 1 B	KICK FX 1 C
KICK FX 1 D	KICK FX 1 MIX	KICK FX 2 A	KICK FX 2 B
KICK FX 2 C	KICK FX 2 D	KICK FX 2 MIX	KICK FX 3 A
KICK FX 3 B	KICK FX 3 C	KICK FX 3 D	KICK FX 3 MIX
KICK FX 4 A	KICK FX 4 B	KICK FX 4 C	KICK FX 4 D
KICK FX 4 MIX	SCENE MORPH X	SCENE MORPH Y	

APPENDIX C - COMPATIBILITY, DEFAULTS AND FILE LOCATIONS

ITEM	CURRENT VALUE
Version	V0.9.9.0.78
Preset extension	.qpreset
Preset schema	25
Plugin ID compatibility	LVG73_ACID_REACTOR (internal compatibility ID)
Default/minimum UI	1280 x 740
Maximum UI	2000 x 1157
Preset root	C:\Program Files\Common Files\VST3\QUANTARA.vst3\Presets
Wavetable root	C:\Program Files\Common Files\VST3\QUANTARA.vst3\Wavetables
Wavetable extensions	.wav / .wave
Wavetable native frame	2048 samples
Maximum wavetable frames	256
Classic oscillator sources	Saw / Square / Sine / Triangle
FX racks	8 independent racks x 4 slots
CHAIN default	OFF on startup and INIT; saved per preset
Master AMP default	OFF
Scene Morph default	OFF; INIT clears A/B/C/D
Pitch Bend	+/-2 semitones
Mod Wheel CC1	~5.5 Hz vibrato, up to +/-50 cents
Quality	Eco / Normal / High
Safety Limiter	ON by declared default; INIT forces boolean features OFF

END OF MANUAL