

OFFICIAL USER GUIDE

SUBTERRAIN

RUMBLE KICK VST3 - VERSION 1.0.3

A complete guide to the layered kick engine, sequencer, spatial effects, modulation, presets, installation, 30-minute trial and registration.

FORMAT	VST3 instrument
PLATFORM	macOS 10.13+ / Apple Silicon + Intel
PUBLISHER	QiOO Plugins

START HERE

Quick start

SUBTERRAIN is a monophonic kick and rumble instrument. It can run from its internal 16-step pattern or react to MIDI note-on events and velocity from the host.

1. Load	Create an instrument/MIDI track in a VST3-compatible DAW and insert SUBTERRAIN. Init opens as a neutral classic kick at 130 BPM.
2. Trigger	Keep Sequencer On and press play for the internal pattern, or switch it Off and send MIDI notes from the host. Incoming velocity scales each trigger.
3. Build	Shape Tune, Decay, Drop and Pitch Time first. Introduce Wave and OSC layers only after the core kick is stable.
4. Extend	Raise Rumble Amount, darken Tone, then add Ambience or Long-tail Reverb. Keep the direct transient clear.
5. Finish	Use Final Filter for overall tone, MASTER for normal output level and Gain FX for compressed, saturated loudness.

VERSION 1.0.3 - RELEASE NOTES

Sequencer transport	A dedicated Sequencer On/Off control stops the autonomous pattern while host MIDI triggering remains available. Tempo Sync is inactive while the sequencer is off.

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END-TO-END ARCHITECTURE

Signal flow

```
Sequencer / MIDI -> Kick + Wave + OSC + Sub -> Mixer -> Kick Shape -> Compressor -> Rumble -> Delay ->
Ambience -> Long-tail -> Final Filter -> Gain FX -> Extended Mix -> Master
```



Source domain

Kick Generator, Wave Layer, OSC Layer and the optional Sub Generator form four source voices. The Sub Generator can use a private synchronized pattern.

Kick-only domain

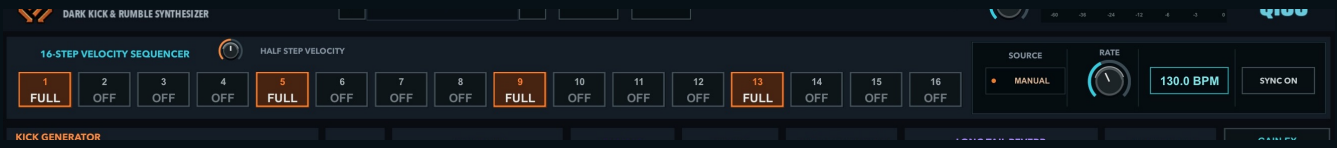
Mixer, Kick Shape and Compressor define the direct impact before time-based effects. Establish punch and tonal focus here.

Spatial domain

Rumble, Delay, Ambience and Long-tail Reverb extend the sound in time. The complete result then reaches Final Filter, Gain FX and MASTER.

RHYTHM AND TRIGGERING

16-step velocity sequencer



CONTROL	RANGE / CHOICES	FUNCTION AND USE
Sequencer	**On / Off**	On runs the autonomous 16-step pattern. Off stops internal sequencing without changing the steps; host MIDI triggering remains available and Sync is inactive.
Steps 1-16	**Off / Half / Full**	Each click cycles through three states. Off is silent; Half uses Half Step Velocity; Full always uses full internal velocity.
Half Step Velocity	**0-100%**	Controls only Half steps. Full steps remain unchanged. At 0%, Half steps are genuinely silent.
Rate	**15-300 BPM**	Manual tempo. Four sequencer steps make one quarter note; four-on-the-floor uses steps 1, 5, 9 and 13.
Sync	**On / Off**	On mirrors host BPM. Off activates the Rate knob. The Source display is status information, not a button.
MIDI note-on	**Host velocity**	Every incoming note-on triggers a fresh kick and respects MIDI velocity, allowing DAW piano-roll sequencing.

EXAMPLES

Four on the floor — FULL - off - off - off, repeated across all 16 steps.

Ghost push — Place a Half step before or after a main beat. Start with Half Step Velocity around 20-35%.

Host performance — Switch Sequencer Off and sequence notes in the DAW for arrangement variations, groove templates and per-note velocity.

FOUR COORDINATED VOICES

Kick sources and mixer



THE HEART OF SUBTERRAIN

100% synthesized

The Kick Generator creates its complete sound in real time from a phase-coherent oscillator body, exponential pitch sweep, synthesized transient burst, harmonic shaping, punch, weight, tightness and drive. It does not read or replay a kick recording.

Build here first

Tune and pitch contour are structural parts of the generated voice rather than pitch-shifted sample playback. Every trigger is generated at the host sample rate with repeatable phase and envelope. The optional Wave Layer is the only sample-based source; the OSC Layer is a second synthesized voice.

KICK GENERATOR CONTROLS

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Tune	30-80 Hz	Settled fundamental. Tune by ear against the bass.
Decay	0.08-1.2 s	Length of the synthesized kick body.
Drop	0-220 Hz	Initial pitch height above Tune; more creates a stronger downward sweep.
Pitch Time	3-120 ms	Duration of the pitch sweep; short is clicky, long becomes rounded or tom-like.
Click	0-100%	Front transient level for audibility without raising the complete body.
Drive	0-100%	Adds harmonics and density inside the voice.
Punch	0-100%	Emphasizes the early body after the click.
Weight	0-100%	Adds a phase-locked low body inspired by analogue drum machines.
Click Tone	0-100%	Moves the transient from dark/soft toward bright/hard.
Tight	0-100%	Focuses the body and contour for a firmer result.

LAYERED REINFORCEMENT

Wave Layer, OSC Layer and Mixer

WAVE LAYER SOURCE

An embedded 24-sound library built from three normalized analogue source families. Classic, Classic 2 and Classic 3 remain intact reference choices; each family is followed by seven shaped variations with different transient, body and tail behavior. No external sample file is required.

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Pitch	**-24 to +24 st**	Transposes sample playback.
Attack	**0-100 ms**	Source-local fade-in; softens the sample onset.
Decay	**0.03-1.5 s**	Source-local decay. Dark Boom extends its effective tail.
Delay	**0-500 ms**	Prepends silence to each new Wave voice; this is not an echo effect.

OSC LAYER SOURCE

Sine is clean sub reinforcement; Square and Saw add harmonics; Triangle is softer; Noise creates transient or industrial texture.

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Waveform	**Sine / Square / Saw / Triangle / Noise**	Selects oscillator shape.
Pitch	**Engine-relative**	Sets oscillator pitch/frequency relationship.
Attack	**0-100 ms**	Smooth amplitude rise plus an opening low-pass that softens sharp waveforms.
Decay	**5 ms-1.2 s**	Source-local oscillator tail.
Delay	**0-500 ms**	Prepends silence before each oscillator voice.

Mixer

The vertical Kick, Wave and OSC knobs balance the main sources. The Sub Generator uses its own high-authority Mix control. Start with only Kick, then introduce one layer at a time.

Source Delay behavior

A new trigger resets the monophonic source, waits for the selected delay and then starts normally. If another note arrives first, that source restarts from the newer trigger.

ADDITIONAL SYNTHESIZED VOICE

Sub Generator



The Sub Generator is a fully synthesized low-frequency kick voice. It recreates the rounded behavior of classic analogue bass drums without sample playback, while allowing extreme reshaping of its front, body and late swell. MENU opens this page in place of the waveform; WAVEFORM returns to the scope without changing the sound.

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Pitch / Drop / Sweep	**Pitch contour**	Set the final low pitch, initial excursion and speed/shape of the downward movement.
Attack / Transient / Soften	**Onset**	Move from immediate impact toward a rounded swell with little or no hard front.
Body / Decay / Swell	**Amplitude contour**	Control low-frequency weight, total length and the later bloom of the synthesized body.
Tone / Drive / Comp	**Finish**	Shape brightness, harmonic density and progressive compression before the Sub Mix.
Direct ADSR	**A / D / S / R**	Shapes the pure Sub voice before tone, drive and compression. The Init values are neutral.
Sub Mix	**0-100% + boost**	Blends the voice; the upper range provides extra authority and soft overdrive.
Sub Sequencer	**Off / On + 16 steps**	Off follows normal triggers. On uses a private 4x4 pattern while sharing host/manual BPM.

Independent rhythm

When its sequencer is enabled, only its own active steps trigger the Sub Generator. The main sources and incoming MIDI remain independent, enabling synchronized polyrhythmic low-end patterns.

IMPACT DOMAIN

Kick Shape and Compressor



KICK SHAPE

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Mode	**Off / LP / HP / BP / Notch**	Filters only the combined kick sources before time-based effects.
Cut	**30-5000 Hz**	Low Pass removes click; High Pass thins; Band Pass focuses knock; Notch carves a conflict.
Res	**0-100%**	Emphasizes the area around cutoff.

COMPRESSOR

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Amount	**0-100%**	True bypass at 0%. Moves from parallel density toward radical limiting, make-up gain and saturation.
ATK	**0.05-100 ms**	Fast catches the onset; slower settings preserve more initial transient.
REL	**10-1000 ms**	Short recovers quickly; long release holds down the body.
Meter	**Gain reduction**	Rises from bottom to top as the compressor reduces level.

Punch recipe Use moderate Amount, a slower Attack and medium Release. Raise Punch before adding more make-up gain.

SPATIAL DOMAIN

Rumble, Delay and Reverb



CONTROL	RANGE / CHOICES	FUNCTION AND USE
Rumble Amount	0-100%	Level of the ducked, low-passed feedback aftershock.
Rumble Decay	0.4-8 s	Tail duration.
Dark Tone	50-500 Hz	Tonal focus; lower values keep the tail behind the kick.
Rumble Drive	0-100%	Adds saturation and density.
Delay Time	1-1000 ms	Short values thicken; longer values create discrete echoes.
Delay Feedback	0-95%	Number and persistence of repeats.
Delay Dry/Wet	0-100%	Echo blend.

AMBIENCE REVERB

Small Room, Studio, Large Hall, Cathedral and Plate provide early-reflection and short/medium space. Decay controls persistence, Damping removes high-frequency energy over time, and Dry/Wet sets the blend.

LONG-TAIL REVERB

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Space	Chamber / Large Hall / Cathedral / Cavern / Endless	Selects late-tail topology and scale.
Tail	0.5-20 s	Long decay time.
Damp	0-100%	Darkens the tail over time.
Pre	0-200 ms	Separates the dry transient from the late field.
Mix	0-100%	Long-tail blend.

RHYTHMIC SPACE

Tail Rhythm Shaper and final tone

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Tail Shaper	On / Off	Chops only the Long-tail Reverb; bypass leaves the original tail unchanged.
Rate	1/4 / 1/2 / 1x / 2x Step	Clock division relative to sequencer steps.
Depth	0-100%	Modulation amount; 0% is neutral.
Smooth	0-100%	Rounds step transitions to avoid hard gating.
Tail steps 1-8	Off / On	Select emphasized segments of the repeating tail pattern.
Final Filter	LP / HP / BP	Processes the complete post-FX signal. Cutoff 20 Hz-18 kHz; Resonance 0-100%.
Gain FX	-24 to +60 dB macro	Below 0 dB attenuates cleanly. Above 0 dB adds drive, adaptive compression and saturation; near the top adds distortion. A soft ceiling prevents hard clipping at its output.
MASTER	0-100%	Normal final output level. Use for balance rather than coloration.

Gain FX versus MASTER

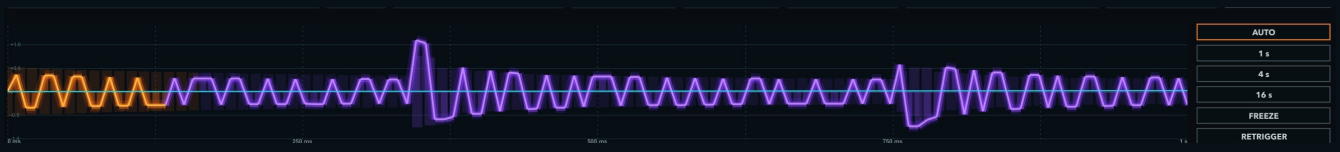
MASTER changes final level. Gain FX is a sound-design macro: above neutral it deliberately changes dynamics and harmonic density.

Dark cathedral

Use 6-12 s Tail, strong Damping, 30-80 ms Pre and moderate Mix. Keep the direct kick clear, then low-pass the complete signal if the room becomes metallic.

SEE THE COMPLETE RESULT

Waveform and meters



CONTROL	RANGE / CHOICES	FUNCTION AND USE
Output waveform	Orange impact / violet tail	Displays the end-to-end signal after the complete chain.
MENU / WAVEFORM	Workspace toggle	MENU replaces the scope with extended controls. WAVEFORM returns to the end-to-end trace.
Window	1 s / 4 s / 16 s	Changes horizontal time span to inspect transient, bar-length decay or long reverb.
FREEZE	On / Off	Holds the current trace for inspection.
RETRIGGER	One-shot	Arms a fresh capture and waits for the next kick onset.
L/R meter	dB scale	Shows stereo output activity. Use the DAW meter for final gain staging.

Reading the trace

A strong narrow onset followed by a lower, longer tail usually translates better than a uniformly dense block. Use the 4 s or 16 s window to judge spatial decay.

BEYOND THE MAIN PANEL

Extended Mix

MENU replaces the waveform with three alternate pages. Choose Sub Generator, Extended Mix or Extended FX; WAVEFORM returns to the scope. Page changes only affect the display. All dry returns and extended processors default to 0% or bypass.



Extended Mix copies the four source voices before the main effects and adds those clean copies near the output, after Gain FX and the extended processors but before MASTER. These are parallel returns: they do not replace the normal source mixer or reduce the effected path.

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Kick Dry Return	**Post-FX Mix**	Restores synthesized kick impact after heavy spatial processing, filtering or saturation.
Wave Dry Return	**Post-FX Mix**	Returns the direct Wave layer for sampled attack or body without raising the complete wet chain.
OSC Dry Return	**Post-FX Mix**	Returns clean oscillator reinforcement and harmonic bite.
Sub Dry Return	**Post-FX Mix + boost**	Restores the envelope-shaped Sub voice. Its stronger upper range compensates for the naturally quieter low-frequency source.

Parallel clarity

If reverb or distortion obscures the transient, raise only Kick or Wave Dry Return. For low-end authority behind a complex tail, add Sub Dry Return carefully. All returns remain under MASTER control.

FIVE OPTIONAL PROCESSORS

Extended FX



Each module has an independent power button and defaults to bypass. The displays visualize gate, fold and modulation shape. Enable and compare one module at a time before combining them.

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Rhythm Gate	1/2 / 1/4 / 1/8 / 1/16	Tempo-synchronized final chopping. Depth moves from a flat signal toward deep gating; Smooth rounds the transitions. Particularly effective on long rumble and reverb tails.
Rift Fold	Fold / Mix	Folds peaks back into the waveform for complex harmonics. Mix blends the level-compensated processed signal with the clean path.
Void Mod	Rate / Depth	Moves from slow cyclic pulses toward fast metallic output modulation; Depth sets the excursion.
Stereo Enhancer	Width / Space	Creates kick-derived side information while retaining centred deep bass. Space controls a 1.5-18 ms decorrelation delay; check mono compatibility.
Fattener	Tone / Amount	Derives an octave-down companion from the combined kick layers rather than a free-running sine, then blends it before the spatial chain.

Safe starting point Leave all modules off, then enable one at conservative settings. Gate creates rhythm, Rift Fold adds harmonics, Void Mod adds motion, Stereo Enhancer adds width and Fattener reinforces the lowest body.

CONTOUR AND MOVEMENT

Amp Envelope and LFOs







FINAL AMP ENVELOPE

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Curve	**EXP / LIN / LOG**	Changes segment curvature: punchy/natural, even, or fast-then-easing.
Retrig	**On / Off**	On restarts the envelope on every trigger; Off lets the active contour continue.
Attack	**0-250 ms**	0 ms leaves the onset unchanged; higher values soften the complete kick.
Decay	**0-1000 ms**	Fall from peak to Sustain. Short is fast/clicky; long preserves body.
Sustain	**0-100%**	Level held while gate remains active.
Release	**2-2000 ms**	Final fall after gate-off. Minimum cuts quickly; maximum approaches natural continuation.

TWO INDEPENDENT MODULATORS

LFO 1 and LFO 2

Each LFO can move one of the first four Kick Generator parameters: Tune, Decay, Pitch Drop or Pitch Decay. Bypass the LFO when no movement is wanted.

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Shape	**Sine / Square / Triangle / Sample & Hold**	Smooth, two-state, linear or stepped-random movement.
Rate	**0.05-5 Hz**	A cycle lasts about 20 seconds at minimum and 0.2 seconds at maximum.
Depth	**Target-scaled**	Modulation strength. Start shallow for pitch-related targets.
Target	**Tune / Decay / Pitch Drop / Pitch Decay**	Selects the Kick Generator destination.
Phase	**0-360 degrees**	Offsets the cycle. Different phases avoid identical LFO motion.
Retrig	**On / Off**	On restarts with each kick; Off free-runs across triggers.
Smooth	**0-100%**	Rounds abrupt Square and Sample & Hold changes.

Slow analogue drift

Tune target, Sine, 0.05-0.15 Hz, very low Depth, Retrig Off.

Organic variation

Use LFO 1 on Decay and LFO 2 on Pitch Decay with different phases, slow rates and shallow depths.

RECALL AND CREATE

Presets and state

The header chooser contains 58 protected factory sounds. Loading one restores a complete state, including all sequencers, sources, extended pages, effects, envelope and modulation, so it never inherits values from the previous sound.

Init	Primal Scream
Rift Scream	Panther Strike
Feral Depth	Razor Bedrock
Motor Vault	Nocturnal Mass
Static Burial	Rain Circuit
Smoldering Core	Servo Impact
Crushing Chamber	Velvet Descent
Creeping Fault	Midnight Freight
Abyss Engine	Hollow Pressure
Molten Depth	Seismic Bloom
Steel Toe	Subharmonic Wire
Echo Wire	Voltage Stomp
Tectonic Choir	Crushing Tide
Low Tide Impact	Night Bedrock
Underground Circuit	Concrete Cathedral
Ghost Machinery	Needle Driver
Triple Impact	Twisted Strata
Core Collapse	Hard Meridian
Pulse Breach	Siren Vault
Basement Pressure	Concrete Pulse
Iron Lung	Night Transit
Deep Current	Club Hammer
Tunnel Vision	Black Velvet
Subduction	Neon Bruise
Dust Chamber	Cavern Signal
Broken Piston	Low Orbit
Aftershock	Rubber Room
Phase Ritual	Midnight Engine
Terminal Bloom	Prismatic Depth

Save Click SAVE, enter a name in the in-plugin overlay and confirm. All persistent UI parameters are stored.

Delete Only user presets can be deleted. After confirmation, the protected Init preset is loaded.

Location User presets are .rum files in ~/Library/Application Support/QiOOPlugin/Subterrain/.

PRACTICAL STARTING POINTS

Sound-design recipes

Tight club kick	Kick only. Tune 45-55 Hz, short Decay, high Drop, short Pitch Time. Add moderate Punch and Tight, then 25-45% Compressor Amount with slower Attack and medium Release.
Dark warehouse rumble	Keep the direct kick clear. Rumble 45-70%, Decay 3-6 s, Dark Tone 80-160 Hz. Add Cathedral or Cavern with 6-12 s tail, high damping and 30-80 ms pre-delay.
Industrial layered hit	Add Tape Slam or Hollow Concrete Wave at 15-35%. Add low-mix Saw or Noise with short decay. Try Kick Shape Band Pass and slow, smoothed modulation of Pitch Drop.
Rhythmic cathedral	Select Cathedral or Endless, Tail 10-18 s, substantial Damp and modest Mix. Enable the Tail Rhythm Shaper at 1x, choose a sparse pattern and raise Smooth.

Working method

Change one stage at a time and loudness-match comparisons. Establish source and transient first, then tail, then final output. A louder setting can appear better even when its tone is less useful.

CURRENT MACOS INSTALLER

Installation and host setup

CONTROL	RANGE / CHOICES	FUNCTION AND USE
1. Install	**Signed PKG**	Open Subterrain-1.0.3.pkg and follow the installer. It installs the universal Apple Silicon + Intel VST3 for all users.
2. Restart	**DAW**	Restart the host. If the plugin is absent, trigger a VST3 rescan.
3. Load	**Instrument track**	Insert SUBTERRAIN as a VST3 instrument on a MIDI/instrument track.
4. Verify	**Stereo output**	Send a MIDI note or run the sequencer and confirm the L/R meter responds.

VST3 LOCATIONS

```
/Library/Audio/Plug-Ins/VST3/Subterrain.vst3
```

The release installer uses the system-wide location above. A typical user-only development location is ~/Library/Audio/Plug-Ins/VST3/.

SYSTEM REQUIREMENTS

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Format	**64-bit VST3**	Instrument with MIDI/event input and stereo output.
Operating system	**macOS 10.13+**	Current release target.
Architecture	**arm64 + x86_64**	Universal Apple Silicon and Intel binary.
Host	**VST3-compatible DAW**	Restart or rescan after installation.
Installer	**Signed / notarized**	Developer ID signed, Apple notarized and ticket stapled.

EVALUATION AND ACTIVATION

30-minute trial and registration

Trial	The unregistered plugin provides 30 minutes of accumulated use. Remaining time persists across plugin and DAW restarts; relaunching does not reset it.
Register	When prompted, enter the exact licensed email address and its signed activation code in the in-plugin overlay. Successful activation removes the trial limit.
Verification	The plugin contains only the public verification key. The license signature is bound to the normalized email address; editing or copying arbitrary license text does not create a valid activation.

LOCAL FILES

CONTROL	RANGE / CHOICES	FUNCTION AND USE
License	**Subterrain.license**	~/Library/Application Support/QiOOPlugin/Subterrain.license
Trial state	**.subterrain-trial**	~/Library/Application Support/QiOOPlugin/.subterrain-trial
User presets	**.rum files**	~/Library/Application Support/QiOOPlugin/Subterrain/

UNINSTALL

Quit all DAWs, then remove /Library/Audio/Plug-Ins/VST3/Subterrain.vst3. License, trial state and user presets remain in Application Support unless removed separately, preserving registration and sounds for a later reinstall.

OPERATIONAL NOTES

Reference and support

CONTROL	RANGE / CHOICES	FUNCTION AND USE
Product	**SUBTERRAIN Rumble Kick**	Guide version 1.0.3
Triggering	**Sequencer + MIDI**	16 three-state velocity steps or host note-on with velocity.
Output	**Stereo**	Header L/R meter plus host metering.
Automation	**VST3 parameters**	Host-automatable; rapid continuous changes are smoothed in the audio engine where appropriate.
Factory library	**58 sounds**	Complete states with Init first and Prismatic Depth last.
Trial	**30 minutes**	Accumulated use, persisted locally.
Support email	**plugins@qioo.de**	Contact plugins@qioo.de and include macOS version, DAW name/version, Mac architecture and reproduction steps.

SUBTERRAIN RUMBLE KICK

DARK KICK & RUMBLE SYNTHESIZER

Guide for SUBTERRAIN 1.0.3 - Updated 23 October 2026

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