cableguys

ShaperBox 3

Manual

v3.6.3

Contents

Welcome to ShaperBox 3 **3**
Quick-Start Guide **4**
Reference **9**
Meet The Shapers 9
TimeShaper 3 10
PitchShaper 12
DriveShaper 2 14
NoiseShaper 2 16
ReverbShaper 19
FilterShaper Core 3 21
LiquidShaper 23
CrushShaper 2 24
VolumeShaper 7 25
PanShaper 4 26
WidthShaper 3 28
Shaper Selection Screen 29
Shaper Bar 29
Top Bar 30
Preset Library 30
Preset Browser 31
Main Menu 32
Help Bar 34
Wave Presets 35
Wave Palette 35
Shaper Oscilloscope 36
LFO Wave Editor 37
LFO Settings 41
MIDI Setup 43
Audio Trigger Setup 44
Multiband Editor 45
Routing And Mixing 46
Envelope Follower 47
Tools 55
Compressor 55
Oscilloscope 59
Automation Target Indicators 61
Latency and lookahead 61

Welcome to ShaperBox 3

Cableguys ShaperBox 3 is a flexible effects rack for precision mixing and creative sound design. It contains nine powerful effects called Shapers, plus Compressor and Oscilloscope Tools, which are processed in series, meaning the output of each one feeds into the next, creating an effects chain. They can be placed in any order you like to create a wide range of effects.

Each Shaper's effect is controlled by an editable LFO – using Cableguys' easy editing tools, you can quickly design LFOs of arbitrary complexity, combining straight lines and smooth curves. Envelope Followers provide another, dynamically-driven layer of modulation and control, expanding the creative possibilities.

System Requirements

Windows
Windows 7, 8, 10 or 11
VST2, VST3 or AAX host sequencer
64-bit

Mac
Mac OS X 10.15 or later
Intel or Apple Silicon (Native/Rosetta) processor
VST2, VST3, AU or AAX host sequencer

Works with Ableton Live, Logic Pro, Pro Tools 12, Cubase, Bitwig Studio, FL Studio, REAPER, Studio One, and many other DAWs that support VST2, VST3, AU or AAX.

Internet connection required for downloading NoiseShaper's noise samples.

Installation & Licensing

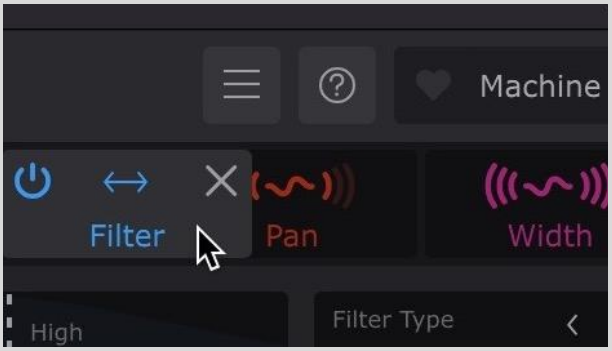
Please refer to the online **Cableguys Installation Instructions**.

Quick-Start Guide

1. Add a Shaper

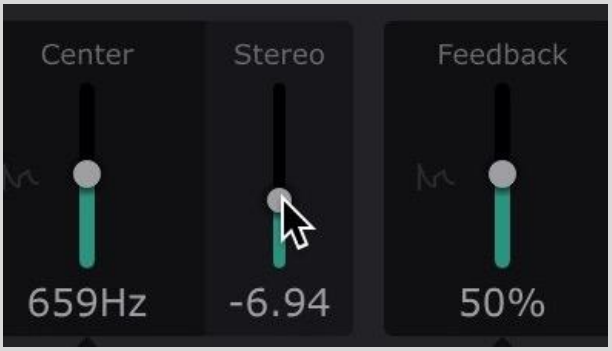
When you load ShaperBox 3, you see a screen that shows all available Shapers and Tools. Go ahead and click one to add it to the effects chain in its default state. Don't own all Shapers yet? No problem – you can run any of them in demo mode to test them out.

2. Manage your Shapers



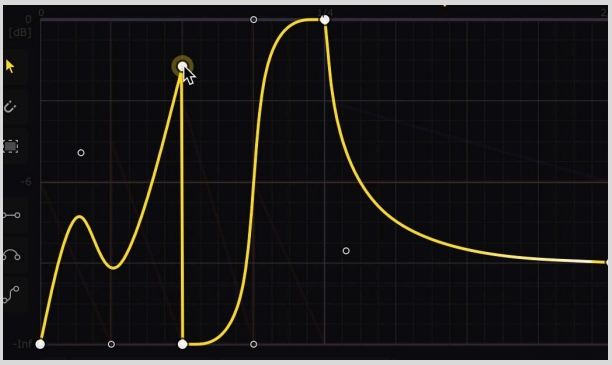
Do you want a filtered stutter or a stuttered filter? The order in which you place your Shapers can have a big impact on the sound – drag them left and right in the Shaper Bar to rearrange them. To bring up a Shaper for editing, click its icon. Hit '+' to bring up the Start Screen and add more Shapers (you can add one of each).

3. Editing parameters



Drag a slider to adjust its parameter – hold **Shift** for precise adjustment. Double-click to reset to the default value. Scroll your mousewheel or trackpad with the pointer over a control to adjust it, or over a menu to step through its contents.

4. Design your LFO Wave

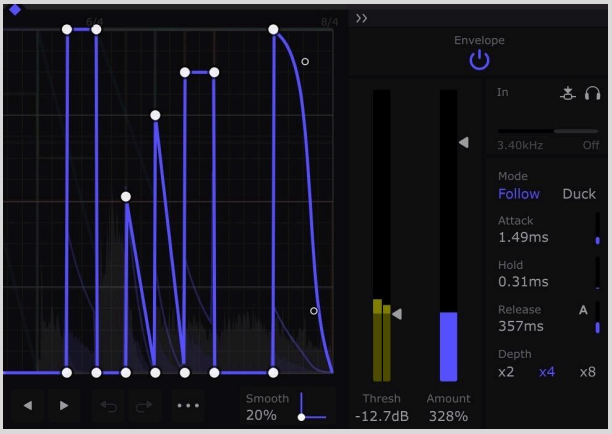


The large graph in the center of each Shaper is the LFO Wave Editor — use it to modulate Shaper Parameters such as volume or filter cutoff frequency over time, creating motion and movement that bring your tracks to life. Create your own custom modulation LFO waveform by dragging in the Wave Editor area using the pointer tool, or three powerful Pens – learn more about wave editing by clicking the '?' icon at the top of the plugin.

5. Choose a Trigger Mode: Sync, MIDI or Audio

Set up any or all Shapers to have their LFOs loop in sync with the host DAW, restart with MIDI note input, or trigger in response to transients in the input audio signal or another track in your DAW via the sidechain. Audio triggering opens up a world of shaped effects that react to the rhythm of percussion, synths and other sounds, kick-triggered bassline ducking, and more. The dedicated **Audio Triggering Setup** panel enables selection between three transient detection algorithms, and adjustment of various parameters including detection sensitivity and filtering.

6. Set up the Envelope Follower



Pitch, Filter, Drive, Crush, Noise, Liquid, Reverb, Pan and Width Shapers feature an envelope follower that reacts to peaks in the incoming audio signal. For example, use it to make the filter open automatically with each snare drum hit.

To turn the envelope follower on/off, click the Envelope power button, top right. Raise or lower the Amount slider to set the strength of the modulation – ie, how deep the filter, pitch, drive, crush, noise level, pan or width changes will be.

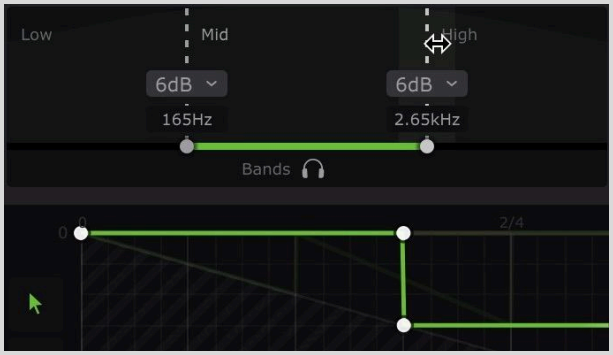
When you need to get into the details, open the Edit Panel using the arrow button above the Envelope power button. Use the Attack, Hold and Release controls to shape the Envelope's

response to the incoming audio. The Threshold determines the input signal level that has to be exceeded for the envelope follower to respond.

7. Load Wave Presets

For instant inspiration, use the Wave Preset buttons below-left to call up specially designed LFO Wave Presets. These cover everything from classic sine, square, saw and other analogue-style waveforms, to production essentials like sidechain ducking, and a variety of creative rhythmic patterns. Or use the preset bar at the very top of the interface to load professionally crafted ShaperBox 3 presets – step through presets with the < and > buttons to the right of the current preset name, and open the full browser by clicking the preset name.

8. Focus Your Sound



Want to apply a Shaper to just one frequency range? Perhaps you'd even like to try different LFO or envelope follower setups for the bass, middle and treble. The Bands section gives you this power. Use the multiband crossover in the upper left – grab the handles to adjust the frequencies, and click a band to edit its controls. Use the upper-right Mix slider to blend dry and wet signals for every band, or the Master Mix in the top bar to set the overall strength of ShaperBox's processing.

Need more help?

Hover the mouse over any control to see a quick description in the lower Help bar. Click the '?' icon at the top of the plugin for detailed wave-editing help, and a link to the current version of this manual.

Additionally, the **Cableguys YouTube channel** contains many video how-to's, tips and tricks, including key ShaperBox tutorials:

▶️ **Learn How To Use DriveShaper in 5 minutes.**

▶️ **Learn how to Make Your Music Move With Filters using FilterShaper Core.**

▶️ **Learn How To Use NoiseShaper in 7 minutes.**

Reference

Meet The Shapers

Each Shaper has a different specialism and at least one Shaper Parameter that can be modulated by the LFO waveform drawn in the Wave editor – FilterShaper Core's Cutoff and Resonance controls, for example. Pitch, Drive, Crush, Filter, Noise, Liquid, Reverb, Pan and Width Shapers can also be modulated using an Envelope Follower.

There are three ways to control a Shaper Parameter: by dragging its control slider up/down, via the LFO, or with the Envelope Follower. All three methods can be used simultaneously.

Dragging the control slider up/down actually moves the entire LFO up/down. The number shown in the tile represents the average value of the waveform, and when the waveform is shifted into the top or bottom of the graph, it 'clips', ultimately flattening entirely as the average reaches 100% at the top or 0% at the bottom. PitchShaper displays its average slightly differently to the other Shapers, as described in the PitchShaper section.

When there are multiple Shaper Parameters, single-click one to select it for editing.

When a Shaper Parameter is being actively modulated by the LFO or Envelope Follower, you'll see its symbol light up, to remind you that it is no longer a static setting. We'll use this symbol in the manual, too, to denote Shaper Parameters.

Note that TimeShaper is a special case: unlike the other Shapers, it does not feature a control slider or an Envelope Follower, and its underlying "time" parameter is controlled solely via the LFO. Also, NoiseShaper, by its very nature will be triggered by the Envelope Follower the majority of the time.

Shapers also have further Settings in the top bar section that cannot be modulated – although, like most controls in ShaperBox, they can be automated in your DAW.

TimeShaper 3

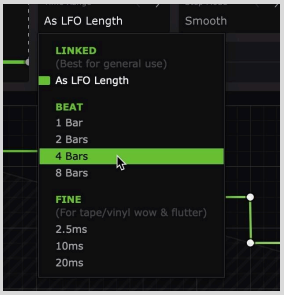
TimeShaper works by storing the incoming audio in a buffer, then scrubbing or scratching backwards and forwards through that buffer in real time, based on the movement of the LFO.

Use TimeShaper for...

- Smooth, click-free stutters and edits
- Stutter effects using Step Draw mode
- Half-speed effects for trap and hip-hop
- Real-time reverse effects
- Tight, tempo-locked scratches
- Half-speed slow-down effects
- Tight tape-stops
- Tape-style 'wow', chorusing, vibrato and more

Settings

- **Time Range**
  - **Linked (As LFO Length)**: The default setting, suitable for most situations. The maximum time offset (Y axis of the graph) is equal to LFO Loop Length, which can be in beats (**LFO Mode: Beat**), milliseconds (**LFO Mode: Hertz**), or as defined by the incoming MIDI note (**LFO Mode: Pitch**).
  - **Beat (1/2/4/8 Bars)**: Set the maximum time offset manually in bars. Set higher than LFO Length to jump further back in time; set lower for greater vertical resolution in the Wave Editor.



  - **Fine (2.5/10/20ms):** The maximum time offset is very small indeed (2.5, 10 or 20ms), creating subtle fluctuations rather than large jumps in time. Use this to create realistic tape/vinyl-style pitch 'wow' effects, vibrato, chorus/flanger (in conjunction with dry/wet Mix), etc.

- **Step Mode**
  - **Smooth**: Prevents clicks by performing a small fade-in before each 'hard' step, such as those used in the Stutter category of the Factory Waves. This is the default option, giving the best results in most situations.

    - **Instant**: The playback point jumps instantly at hard steps. Clicks may occur, depending on the source material.

Wave Editor

- **X axis:** Time, as determined by the LFO Length/Speed parameter.
- **Y axis:** Time offset, shown in beats or milliseconds. The maximum offset value (labeled at the bottom of the axis) depends on the Time Range option – see the TimeShaper Settings section, below, for more on this.
- **Buffer start reference line**: The diagonal gray line running from the top left to the bottom right of the wave editor represents the start of the current buffer, as defined by the **LFO Length**. When the waveform is below the reference line, playback 'looks back' into the previous LFO Length-defined cycle, and when it intersects the reference line, it plays back the start of the buffer.
  The reference line is also useful for 'stopping' the audio: When the LFO waveform is at the same angle/gradient as the reference line (regardless of where it is in the wave editor relative to it), playback will be stopped. This is helpful as a reference for making tape stops, and if you steepen the angle, playback goes into reverse.
- **Time offset display:** This display also helps you understand how TimeShaper is reading and replaying your audio. The white vertical line moves steadily and indicates the current position within the input audio waveform. The red vertical line shows the point in the audio waveform that's actually playing back – ie, the output.

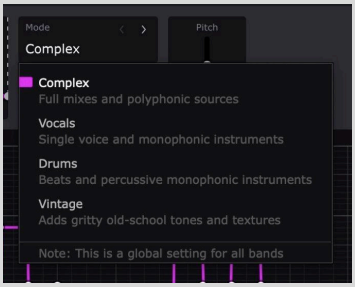
PitchShaper

PitchShaper is a flexible pitch and formant shifting effect, featuring a four-octave pitch range, and a comprehensive selection of four finely honed processing algorithms.

Use PitchShaper for...

- Transposing vocals cleanly, or transmogrifying them with wild formant shifts
- Altering melodies and basslines
- Making ear-catching risers, drops and FX
- Applying dynamically responsive pitch modulation to beats, vocals and more

Settings



- **Mode**: Your choice of pitchshifting algorithm, shared globally by all bands.
    - **Complex**: A general purpose mode suitable for any type of sound, including mixed and polyphonic signals, and other complex material. Preserves transient punch and timing.
    - **Vocals**: The first-call mode for solo vocals and monophonic instruments, with an additional Shaper Parameter for Formant control.
    - **Drums**: Designed to both preserve transients and closely track fundamental punch, Drums mode is your go-to for drums, beats and percussive monophonic instruments. Like Vocals, it has a Formant control. Note that with polyphonic *pitched* percussion – grooves containing lots of overlapping toms, for example – only one drum can be used as the pitch tracking source at any given moment, so consider using **Complex** mode instead in such cases.
    - **Vintage**: A retro-style cyclic pitchshifting algorithm that's ideal for gritty, old-school textures and tones.
- **Grain Size**: In **Complex** and **Vintage** Modes, PitchShaper applies its pitchshifting using granular processing. The size of the grains is adjustable.
    - **Complex Mode**: Three carefully chosen fixed settings (**Short**, **Medium** and **Long**). Shorter grains give tighter transients and timing, while longer grains reduce the potential for artifacts with deep bass notes. The default Short mode works perfectly in most cases, so we recommend to leave it as-is, then simply increase Grain Size if you notice any low-end roughness.

    - **Vintage Mode**: A continuous slider, enabling any Grain Size between maximum and minimum to be set, for sound design versatility. Long settings give raspy glitches, while short values sound more like a flanger!
- **Pitch**: Transpose the audio up to +/-24 semitones in semitone steps, unless the **Shift** key is held down, in which case changes are made in cents. The value readout includes cents only when one or more points in the waveform are off the semitone grid, for ease of reference when shifting pitch patterns up and down. Also, unlike other Shapers, double-clicking the Pitch control retains the pitch offset in cents, rather than returning fully to the centre position, in order to preserve the overall tuning effect that you may have set up.
- **Formant**: In **Vocals** and **Drums** Modes, alter the timbre by shifting the audio's resonant frequencies up or down independently of pitch. Adjustable only when **Formant Link** is Off.
- **Formant Link**: When enabled, **Formant** follows **Pitch**, giving linear timbral shifting, similar to what you would get by adjusting the playback speed of tape, vinyl or a sampler, or indeed, in Complex mode. When disabled, Formant and Pitch are adjustable independently.
- **Density**: Fill the micro-gaps created when **Formant** exceeds **Pitch**. In **Drums** mode, this also preserves punch when Pitch exceeds Formant. Reduce for gritty textures.

💡 TIP: Unlike some pitchshifters, PitchShaper's **Complex** mode applies no processing at all to the input signal when the **Pitch** is at 0.00st (whether as part of a modulation LFO curve or set 'statically' using the Pitch slider). With Complex mode being the default, then, you can rest assured that merely loading PitchShaper into ShaperBox won't change your signal at all.

💡 TIP: **Complex** and **Drums** modes both aim to preserve transients, the difference being that the latter specifically tracks the fundamental pitch of drums on a per-cycle basis, therefore optimally preserving punch and decay. Drums mode's **Formant** control also gives it a creative edge over Complex mode for percussive sources, effectively enabling independent shifting of drums (Pitch) and noisy elements such as hi-hats (Formant). Still, we recommend trying both of these modes on drums as they both give great yet different results.

Wave Editor

- **X axis:** Time, as determined by the LFO Length/Speed parameter.
- **Y axis:** Pitch offset, up to a maximum of 24 semitones (two octaves) up or down from the unprocessed center line.
- **Note Grid:** PitchShifter's grid highlights the pitches 7, 12 and 19 semitones above, and 5, 12 and 17 semitones below the center line. These four offsets represent perfect fifths, which almost always give a musically pleasing result. Useful as a starting point for melodic shifting or blended harmonies.

DriveShaper 2

DriveShaper is a distortion effect featuring LFO and Envelope Follower modulation of Drive amount, and a versatile selection of distortion styles, including clipping, rectification and wavefolding.

▶️ Watch [“How To Use DriveShaper”](#) and learn DriveShaper in 5 minutes.

Use DriveShaper for...

- Rhythmic analogue-style distortion, adding grit and energy to loops
- Envelope-following distortion, applying saturation to only the peaks in a signal
- Dynamic multiband distortion – target specific frequency ranges for envelope-following distortion
- General distortion – even without any modulation applied, DriveShaper’s works wonders on drums, basses, guitars, synths and more

Settings

- **Distortion Transfer Curve**: Visualizes how waveforms are shaped by the distortion, with input amplitude on the X axis and output amplitude on the Y axis. When Drive is modulated by the LFO or Envelope, the curve is animated.
- **Input Gain:** Raise or lower the gain of the audio signal at the input, from -12dB to +36dB, to balance it with DriveShaper’s built-in gain compensation. The input signal is visualized by the red meter integrated into the Distortion Curve display – to ensure optimum signal level, aim to have the meter full most (but not all) of the time.

- **Output Gain**: Compensate for the volume level increase at the output that can occur as the Drive is boosted, from +12dB to -36dB.
- **Drive**: DriveShaper’s main control, boosting the gain of the signal going into the saturation circuit to increasingly distort it, with gain compensation automatically applied to balance the output level. The precise effect of increasing the Drive depends on the currently selected distortion **Style**. The Distortion Transfer Curve visualizes the mapping of input to output in real time as the control is adjusted or modulated, so you can see, as well as hear, what’s happening.

- **Grip**: Modify the distortion curve to make the quiet parts of the signal even quieter the further it's raised. This is useful for preventing ambience or background noise being boosted along with the rest of the distorted signal, as well as general creative waveshaping purposes.
- **Push**: Apply DC offset for asymmetric distortion in the Rectify and Wavefolding Styles, except Extreme Fold, where the positive and negative sides of the curve are pushed in opposite directions.
- **Style:** 12 varied distortion types for a wide range of sonic possibilities.
    - **Soft Clip:** Relatively gentle saturation of the kind produced by overdriving a vacuum tube amplifier or electromagnetic tape. The top of the waveform is clipped differently to the bottom, producing more odd harmonics.
    - **Smooth Clip**: Hard saturation with some softening curvature at the 'edges' of the clipped waveform, similar to that produced by guitar fuzzbox effects.
    - **Hard Clip:** Even harder saturation. The top of the waveform is chopped off immediately at the clipping point, while everything below it is untouched..
    - **Soft Square**: Adds smooth distortion around the zero crossing line, and gradually squashes the distortion curve towards a rectangular shape.
    - **Hard Square**: Adds hard distortion around the zero crossing line, while soft-clipping the top of the waveform.
    - **Soft Rectify**: Gently rectifies and soft clips the signal, flipping the bottom half of the waveform up to the top for 'octave up' effects. Adjust the Push parameter to create characterful asymmetric distortion.
    - **Hard Rectify**: Rectifies and hard clips the signal, flipping the bottom half of the waveform up to the top for edgier 'octave up' effects. Adjust the Push parameter to create interesting asymmetric distortion.
    - **Skew Fold**: Rough approximation of a bipolar sinusoidal wave folding function with a distinctive and colorful harmonic series.
    - **Sine Fold**: Bipolar sinusoidal wave folding. The bipolar transfer curve ensures that the fundamental frequency is preserved.
    - **Triangle Fold**: Bipolar triangular wave folding. The bipolar transfer curve ensures that the fundamental frequency is preserved
    - **Saw Fold**: Bipolar saw wave folding. The bipolar transfer curve ensures that the fundamental frequency is preserved.
    - **Extreme Fold**: Non-linear transfer curve based on a three-stage analogue wave folding design.

- **Accent**: Emphasize or de-emphasize peaks in LFO/Envelope modulation by scaling the gain compensation. This is useful for giving modulated distortion patterns more punch and impact, or making them sit better in the mix if they're jumping out too much.
- **Tone**: A bipolar low-pass/high-pass filter that's progressively mixed in as the Drive is raised. Useful to balance the low-frequency boosting that can result from Drive modulation, or damping excessive harmonic generation.

NoiseShaper 2

NoiseShaper adds a layer of noise to any sound source, and enables independent modulation of its volume and pitch, with a dedicated LFO and Envelope Follower for each. A wide variety of synthetic, organic, percussion and analogue sampled noises is onboard, and there are separate Envelope Follower modes for making the noise track the audio input or duck with it.

▶️ **Watch [“How To Use NoiseShaper”]() and learn NoiseShaper in 7 minutes.**

Use NoiseShaper for...

- Layering dynamically responsive noise onto any audio signal.
- Generating vinyl crackle, tape/cassette hiss, analogue noise and ambience beds that pump and breathe with the beat.
- Enhancing kicks, snares, claps, hi-hats and percussion by adding new noise transients or tails.
- Designing ear candy FX, ‘pre-layers’, fills and risers/sweeps using rhythmic LFO modulation of noise level and pitch.
- Targeted enhancement of single hits within a complex loop (only the snare, say) with noise drawing and multiband reactivity.

💡 TIP: NoiseShaper is the only Shaper that creates its own sound. In other words, it does not change the input but instead mixes new audio into it.

💡 TIP: The **Noise** parameter is designed for use primarily with the Envelope Follower, which is open and active by default. (The LFO still has its uses, of course.)

💡 TIP: The **Cymbal** and **Percussion** categories comprise a collection of sustained cymbal, drum and percussion ‘body’ sounds that are ideal for breathing life into static drum loops. Use the **Pitch** control to tune them.

Settings

- **Type:** Select any of over 60 diverse noises, organized into **Noise**, **Organic, Analogue**, **Cymbal** and **Percussion** categories. Noises are downloaded to your computer the first time you launch ShaperBox 3, and you can select them directly from the menu, or step through them using the arrow buttons.

- **Noise**: Set the volume of the noise signal, from -inf to 0dB.
- **Trim:** Apply up to +12/-48 dB of gain to the output of the noise signal. Useful for creating headroom at the top of the LFO graph, or boosting the noise signal when using the Envelope Follower with quiet source sounds.
- **Pitch**: Raise/lower the pitch of the noise by up to +/-24 semitones (two octaves).

- **HP/LP filter**: Shape and limit the frequency range of the noise with a combination high-pass/low-pass filter. Drag the left handle to adjust the high-pass filter cutoff frequency, and the right handle for the low-pass cutoff. Drag the bar in between to move both filters up and down the frequency range together, maintaining their spacing.
- **Mono Noise**: Every NoiseShaper noise is stereo by default – click the Mono button to switch to mono. This simply mutes the right channel and pans the left channel to center, negating the phase issues that would occur with both channels summed and centered.
- **Noise Only**: Mute the input signal, so that only the noise is heard – perfect for sound design, or splitting the noise onto a separate track for mixing.

  Note: Most of NoiseShaper's noises cover the full audible frequency spectrum, from 20kHz right down to 20Hz. However, the low-end sub-bass rumble is almost always undesirable, so the **HP** filter cutoff frequency defaults to **120Hz**. When you do want those low frequencies to be present (such as when using the 50Hz noises in the Hum category), drag the left handle down to 20Hz.

Envelope Follower Settings

- **Follow**: In Follow mode, the noise level tracks the dynamic contour of the input signal, rising and falling in tandem with it. This is the mode to opt for when you want to add a noise layer directly to an existing sound.
- **Duck**: With NoiseShaper's Envelope Follower set to Duck mode, the noise is ducked (attenuated) whenever a signal is present at the input, rising up again to 'fill the gaps' as the input signal drops in volume. The **Threshold** slider determines the volume level that the input has to reach to initiate the ducking, while the **Level** slider controls the amount of ducking applied.

For a complete overview, see the **Envelope Follower** section of this manual.

💡 TIP: In use, NoiseShaper's multiband functionality can feel a little different to that of its sibling Shapers, as it doesn't have any effect on the noise spectrum itself. Remember, to filter the noise itself, use the **HP/LP Filter** control rather than reach for the Bands control.

💡 TIP: Use **Bands** for noise that reacts only to a particular frequency range of the input signal. For example, drag the **High Split** slider to the left, and the noise will be triggered by

the input's low frequencies only. The bands are independent, so you can load different noises into each.

User noise import

Got a folder full of vinyl crackle, field recordings or tape hiss loops that you'd like to use with NoiseShaper? Although NoiseShaper's factory library provides a wide range of fine-tuned source material for your sonic adventures, it is possible to import your own samples, too.

Here's how:

1. From the **Main Menu** (☰ icon), choose **Show User Noise Folder** to open **Documents/Cableguys/ShaperBox 3 User Noises** in Windows File Explorer/macOS Finder. This is where all user noise files are stored.
2. If you like, create further folders within the **ShaperBox 3 User Noises** folder to categorize your noises. Note that only one tier of subfolders within **ShaperBox 3 User Noises** is supported – further subfolders within those subfolders won't be seen by NoiseShaper.
3. Place any number (but see below) of samples in WAV, AIF, AIFF or FLAC format in the **ShaperBox 3 User Noises** folder and/or any subfolders you've added to it.
4. Launch NoiseShaper and open the **Type** menu. Your imported noises and subfolders will be available in the **User** column.

Please note:

⚠ Only one tier of subfolders is supported.
⚠ The maximum total number of supported samples and/or folders is 10,000.
⚠ Samples are limited to 100MB each, with sample rates up to 192kHz.
⚠ User noises aren't saved with presets – only the file path to the sample is saved. If ShaperBox cannot locate a user noise sample, the **Type** menu is highlighted red.

For best results, use samples that are:

✔ Cleanly looping
✔ Noise-based
✔ Without tonal/pitched/musical elements
✔ Without rhythmic elements
✔ Consistent in level/dynamics

NoiseShaper isn't designed to be used with 'non-noise' type sounds, especially not rhythmic or melodic content.

ReverbShaper

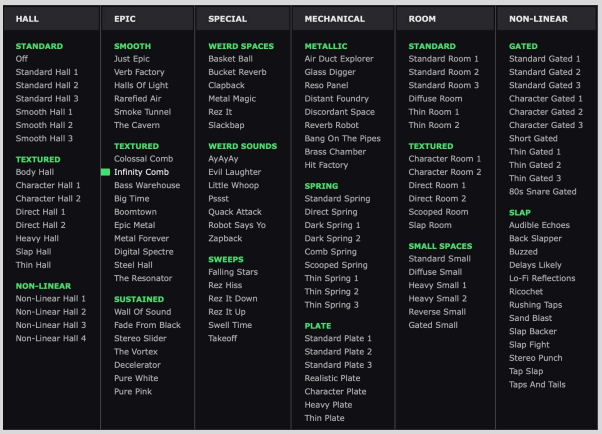
ReverbShaper is a convolution reverb with a huge and diverse library of impulse responses, and independent LFO and/or envelope-driven modulation of input (**Send**) and output (**Volume**) levels.

Use ReverbShaper for…

- Rhythmic modulation of reverb tails for creative spatializing and sound design
- Perfectly placed and sculpted reverb 'spins'
- Dynamically responsive reverbs that undulate with the contours of the input signal
- Multiband reverbs with completely independent impulse response selection and setup in each of three bands
- Ducked reverb where the reverb swells up in the gaps in vocal and instrument lines.

Settings

- **Reverb**: Select an impulse response from the following categories.



  - **Hall**: Simulations of medium and large performance spaces.
  - **Epic**: A wide variety of enormous spaces with very long tails.
  - **Special**: Strange and otherworldly ambiences, textures and environments.
  - **Mechanical**: Spring and plate reverbs, and a range of metallic-sourced IRs.
  - **Room**: A diversity of small and medium room simulations.
  - **Non-Linear**: Shaped and gated tails for hyper-real reverberation.

- **Send:** Set the amount of dry input sent to the reverb.
- **Pre-Delay**: Offset the reverb start time to put 'space' in between it and the input signal. Useful for giving transients separation and clarity. When moved to near the end of its travel, the pre-delay can be synced to musical values – useful for special rhythmic effects.
- **Decay**: Set how long it takes for the reverb tail to fade to silence.

- **Gated**: Gate the reverb tail. The **Decay** control now sets the amount of time the impulse response is played before the tail ends abruptly.
- **Width**: Narrow or expand the stereo image of the wet signal by adjusting the level of the side signal, from mono at 0% to super wide at 200%.
- **Size**: Resample the IR to alter the length, timbre and general sense of scale.
- **Volume**: Set the output level of the reverb.
- **Clear tails**: Clear the reverb tail whenever playback reaches a hard point set to 0% in the **Volume** LFO. Use this to prevent long decay tails overlapping – between chords that would clash harmonically, for example. When multiple consecutive hard points are instantiated with the waveform between them at a constant 0%, only the last one will clear the tail, thereby maintaining smooth transitions at high **Smooth** settings. With Clear Tails active, a small green dot appears below every tail-clearing point, making it totally clear what's happening.
- **Dry/Wet**: With its modulatable 'send/return'-style architecture requiring the dry and wet signals to be balanced independently of each other at the output, ReverbShaper's mix control is different to those of the other Shapers, enabling the reverb level to be raised without commensurately lowering the dry level. The left hand value is the dry level; the right hand value is the wet level.

User impulse response (IR) import

ReverbShaper's factory Reverb library is full of inspirational impulse responses across a broad range of categories, but you can also bring in your own IRs (or any other samples) in WAV, AIF, AIFF or FLAC format.

Here's how:

5. From the **Main Menu** (☰ icon), choose **Show User Reverb Folder** to open **Documents/Cableguys/ShaperBox 3 User Reverbs** in Windows File Explorer/macOS Finder. This is where all user IRs are stored.
6. If you like, create further folders within the **ShaperBox 3 User Reverb** folder to categorize your IRs. Note that only one tier of subfolders within **ShaperBox 3 User Reverbs** is supported – further subfolders within those subfolders won't be seen by ReverbShaper.
7. Place any number (but see below) of sampled IRs in WAV format in the **ShaperBox 3 User Reverb** folder and/or any subfolders you've added to it.
8. Launch ReverbShaper and open the **Reverb** menu. Your imported noises and subfolders will be available in the **User** column.

Please note:

⚠ Only one tier of subfolders is supported.
⚠ The maximum total number of supported samples and/or folders is 10,000.
⚠ Samples are limited to 30MB each, with sample rates up to 192kHz.
⚠ User IRs aren't saved with presets – only the file path to the sample is saved. If ShaperBox cannot locate a user IR sample, the **Reverb** menu is highlighted red.

For best results, use samples that are free of excess silence at the beginning and end.

FilterShaper Core 3

FilterShaper Core is a powerful three-band multimode filter that enables independent modulation of both cutoff frequency and resonance, with a dedicated LFO and Envelope Follower for each.

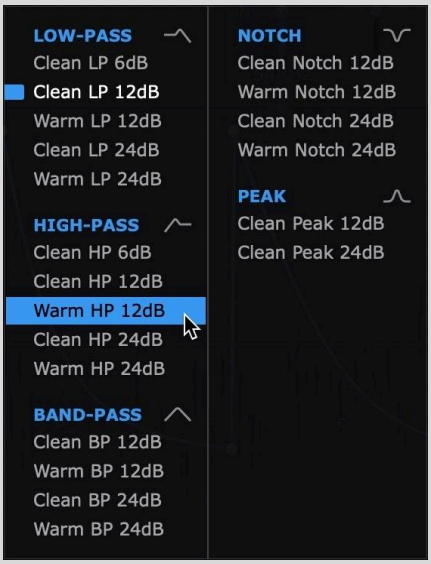
▶️ Watch [“Make Your Music Move With Filters”](#) and learn how to add flow, life and musical movement to your music with FilterShaper Core.

Use FilterShaper Core for…

- Rhythmic filtering of beats, pads, basses – anything!
- Isolating or removing kicks, snares and hi-hats from drum loops
- Elaborate multiband filtering with a different filter type on each band
- Dynamic filter modulation based on the volume of the input or an external signal
- Complex ‘wah’-style effects with an envelope follower on every band
- Radical multiband sound design with audio-rate modulation

Settings

- **Filter Type**: Filters are arranged under the following main headers.
    - **Low-pass**: Allows only frequencies below the Cutoff to pass.
    - **High-pass**: Allows only frequencies above the Cutoff to pass.
    - **Band-pass**: Allows only frequencies immediately above and below the Cutoff to pass.
    - **Notch**: Cuts the frequencies immediately above and below the Cutoff.
    - **Peak**: Boosts the frequencies immediately above and below the Cutoff.



Filters also come in the following “flavors”:

- **Clean:** Transparent filters for uncoloured frequency shaping.

    - **Warm:** Analogue-style (Sallen-Key) filters. Sallen-Key is a classic filter design found in several vintage and modern hardware analogue synths. Selecting any non-Notch Warm filter enables the **Dist**, **Safe Res** and **Hard Dist** controls, allowing adjustable saturation of the resonance feedback circuit and self-oscillation.
    - **6/12/24dB**: Three roll-off slopes define the sharpness and precision of the filter. 6dB/octave is shallow and gentle; 12dB/octave is the standard for controlled but characterful filtering; 24dB/octave is steep and powerful**.**

- **Filter Response Display**: The animated graphic below the Filter Type menu shows the modulated filter response curve in real time.
- **Cutoff:** Control the filter cutoff frequency, from 20.6Hz to 21.1kHz.
- **Stereo:** Raise/lower the Cutoff in the left channel by up to 60 semitones, while moving the Cutoff in the right channel by the same amount in the opposite direction. Particularly effective with the Notch, Peak and BP Filter Types.
- **Resonance:** Control the amount of filter resonance, emphasizing frequencies around the cutoff, or widening the cut in Notch mode.
- **Dist**: With a Warm filter type selected, apply saturation inside the resonance feedback circuit. Decrease for classic whistling tones. Increase for saturation and smoothed resonance peaks.
- **Safe Res:** Engaged by default to prevent the resonance exceeding “safe” levels when using Warm filters. Disengage to allow the resonance feedback to build up when the Resonance enters (or is modulated into) the orange highlighted area at the top of the LFO Wave Editor, resulting in self-oscillation. Note that Safe Res is not available for Warm Notch filters as this filter type cannot self-oscillate.
  WARNING: Loud output volumes are possible when using self-oscillation.
- **Hard Dist**: Switch the resonance distortion to hard clipping mode for a more aggressive sound.

💡 TIP: Don’t be afraid to push FilterShaper Core to extremes, as various systems have been implemented to ensure that the output is always dynamically consistent, musical and mix-friendly. Zero-delay feedback DSP is used throughout, yielding an analogue-like response with even the fastest, wildest audio-rate modulations (easily possible with ShaperBox’s LFOs, which go up to 5.24kHz). In addition, internal saturation and resonance compensation mean you can take these filters to the brink of insanity – and beyond!

LiquidShaper

LiquidShaper takes flanging and phasing to new creative heights, enabling complex modulation of center frequency and feedback via a dedicated LFO and/or envelope follower for each.

Use LiquidShaper for…

- Spectacular 'jet engine' flanging and deep, rich phasing
- Bringing modulated movement to guitars, synths, vocals, percussion and more
- Wild robotic comb filter effects

Settings

- **Type**
  - **Off:** Disable all processing. This is useful when using LiquidShaper in multiband mode, where you might only want to process one or two bands and leave the other one or two unaffected.
  - **Flanger:** LiquidShaper duplicates the input signal and applies a very short delay to the copy before mixing it with the original. This temporal offset causes a comb filtering effect, creating an unlimited series of harmonically related notches and peaks. In + **Mode**, the LFO-modulated **Centre** parameter controls the frequency of the first peak; in – **Mode**, it controls the frequency of the first notch.
  - **Phaser:** LiquidShaper duplicates the input signal and applies a series of all-pass filters to the copy before mixing it with the original. The all-pass filters implement a frequency-dependent delay that causes a less pronounced comb filtering effect than flanging, with a fixed number of harmonically unrelated peaks or notches spaced equally above/below the **Centre** frequency.
- **Mode:** Flip the polarity of the feedback stage, switching between rich (+) and hollow (-) Flanger timbres, or resonant Phaser peaks (+) and notches (-).
- **Stages:** Set the number of all-pass filters in the Phaser. Every two Stages creates a single comb filter peak/notch, so you can have 2, 4, 6 or 8 peaks/notches.
- **Center:** Adjust the center frequency above (Flanger) or around (Phaser) which the comb filter peaks and notches are generated.
- **Stereo:** Raise or lower the Center frequency in the left channel by up to 60 semitones, and shift the right channel by the same amount in the opposite direction.
- **Feedback:** Feed the delay line or all-pass filters back into themselves, intensifying the peaks and notches for both Phaser and Flanger.

CrushShaper 2

CrushShaper is a digital distortion effect that enables independent modulation of bit depth and sample rate, using a dedicated LFO and Envelope Follower for each.

Use CrushShaper for…

- Rhythmic distortion, turning any loop into a track-starting groove
- Making lo-fi melodies – bring the crunchy, evocative sound of vintage digital hardware to your synths and samples
- Adding sizzle to just the high frequencies, increasing the presence of drums, synths and more
- Brightening up targeted elements in a drum loop (the snare or hi-hats, say) with multiband LFOs and envelopes
- Getting vocals to pop through the mix by adding top-end clarity and sheen

Settings

- **Bits:** Apply bit-depth reduction, sweeping down from 16-bit at the top of the Y axis to 1-bit at the bottom. When the parameter value reads 'Max' and is unmodulated, the entire Bits section is bypassed, allowing full-resolution audio to pass through.
- **Push:** The Bits section's Push control dials in DC offset prior to reducing bit depth (again, removed afterwards) to preserve the low-level components of the signal – useful for restoring sustains and tail elements.
- **Dither:** Reduce quantisation distortion and gives greater dynamic range and preservation of the original signal, at the expense of added background noise.
- **Resample:** Control the sample rate, sweeping from 44.1kHz at the top to 8.82Hz at the bottom of the Y axis. (If your DAW project is using a sample rate other than 44.1kHz, then the full resolution signal, eg, 96kHz, will be passed through when Resample shows '44.1kHz' and no modulation is applied.)
- **Jitter:** Increase to emulate the inherent fluctuations of vintage samplers by randomly modulating the sample rate around the Resample value.
- **Pre-Filter:** Reduce aliasing caused by the resampling process, applying a low-pass pre-filter at around half the Resample value (ie, the virtual Nyquist frequency).
- **Treble:** Apply a fixed-frequency high shelving filter at the output that attenuates high frequencies as **Resample** and **Bits** values decrease, for controlling high-end harshness, or simply achieving soft, lo-fi effects. At 100%, the sound is unfiltered.

VolumeShaper 7

VolumeShaper modulates the volume of the audio signal based on the LFO waveform drawn into the Shaper Graph.

Use VolumeShaper for…

- Classic sidechain pumping/ducking effects
- Precision control of dynamics
- Achieving louder mixes by sidechaining only the bass
- Removing and softening elements in a mixed loop
- Rhythmic gating/stuttering – a.k.a. 'trance gating'
- Completely custom tremolo effects
- Isolating elements within a mixed loop
- Transient editing

Settings

- **Volume**: Apply gain ranging from -inf. dB (silence) to 0dB (no change). Note that the Shaper Parameter value is by necessity shown in %, though the graph operates in dB, from -inf dB at the bottom, through -6dB at the center, to 0dB at the top.
- **Trim**: Apply up to +/-24dB of gain to the output of the Volume module. Useful for creating headroom at the top of the LFO graph (e.g., for boosting transients).
- **Show External Sidechain**: Overlay the waveform of the external sidechain input on the waveform of the main input signal. Use this to see the precise positioning of both signals together.

💡 TIP: Wondering why there's no Envelope section in VolumeShaper? When volume modulation is controlled by an envelope follower, you get… a compressor! And because the compressor is such a staple tool in music production, we've made ShaperBox's Compressor a separate Tool.

PanShaper 4

PanShaper modulates the stereo position of the audio signal based on the LFO waveform and/or the Envelope Follower, using a blend of regular level-based panning and psychoacoustic Haas placement.

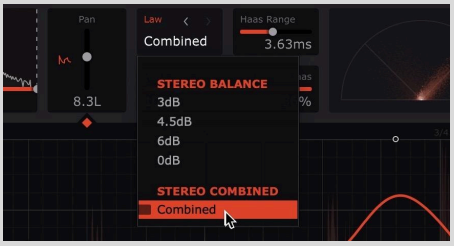
Use PanShaper for...

- Detailed and precise rhythmic panning of any sound
- Bringing stereo movement to mono drums
- Surgical panning of individual frequency ranges within a loop
- Dynamic panning of drums and percussion
- Adding stereo energy to specific frequency ranges
- Mixing regular and psychoacoustic panning for spectacular stereo imaging
- Energizing basslines without compromising mono compatibility
- Modulating the panning of one track based on the volume level of another

Settings

- **Pan**: Pan the signal left and right, using level- and/or delay-based panning, as per the other settings. The Y axis of the Wave Editor shows the left/right pan position and, if it's active, Haas delay time in milliseconds.

- **Pan Law**
  - **Stereo Balance (3dB/4.5dB/6dB/0dB):** Stereo Balance will be the best option for most sources. It works like the pan control in most DAWs/mixers, reducing one channel's level and increasing the other (by 3, 4.5 or 6dB) to compensate for level loss. Set to 0dB for no compensation.



  - **Stereo Combined (Combined):** Pan both channels together to prevent hard-panned sounds from disappearing.

- **Pan/Haas**
  - **100%/0% – 0%/100%**: Combine regular level-based panning with the delay-based Haas effect. The Haas effect uses very short delay times to psychoacoustically simulate stereo imaging placement. The slider ranges

from 100% regular panning to 100% Haas, with combinations of the two in-between.

- **Haas Range**
    - **0.00-40.0ms**: The maximum Haas delay time in milliseconds, as applied at full modulation. Around 2ms gives a range of stereo placement that reflects real life, so this is the default value, but it's quite common in mixing to go higher than this, for 'larger than life' results.

💡 TIP: Haas can cause 'phasing' sounds when mixed to mono, especially when modulated or applied heavily. Therefore, we recommend checking your mix in mono while fine-tuning the Pan/Haas and Haas Range controls, in order to achieve a result that works well in both mono and stereo. You may also try restricting the frequency range of the effect using the Bands section in the upper left. Don't have a 'mono mix' tool? Just add a WidthShaper after PanShaper, and set it to fully mono.

Vectorscope

PanShaper's Vectorscope visualizes the stereo image (defined as width and panorama) of the incoming signal, and can be helpful with ascertaining mono compatibility. Dots within the central 90º 'wedge' are in phase, while those outside it are out of phase. Thus, a centered mono signal will appear as a vertical line, while a 180° out-of-phase stereo signal will appear as a flat horizontal line.

Note that the Vectorscope is positioned at PanShaper's final output, so it doesn't specifically represent the output of the currently selected band. To visualize an individual band, simply solo it in the Multiband Editor.

WidthShaper 3

WidthShaper modulates the stereo width of the audio signal, based on the LFO waveform and/or the action of its Envelope Follower. More specifically, WidthShaper modulates only the side signal of the mid/side mix – this means WidthShaper will never comprise the audio's mono compatibility no matter how wild your experimentation gets.

Use WidthShaper for…

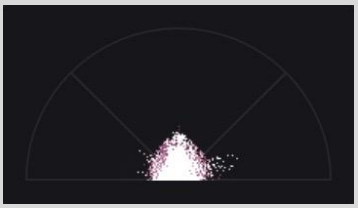
- Creating huge, stereo-filling risers
- Spreading out the high frequencies without affecting the midrange and low end.
- 'Monoising' the bass without affecting midrange and high frequencies.
- Widening or narrowing sounds as they get louder or quieter.
- Modulating the width of one track based on the volume level of another.

Settings

- **Width**: Adjust the stereo image, from mono at 0%, through the original input signal width at 100%, to super wide at 200%.
- **Gain:** Boost or attenuate the volume level – useful for compensating the perceived change in volume caused by narrowing or expanding the stereo width.

Vectorscope

WidthShaper's Vectorscope visualizes the stereo image (defined as width and panorama) of the incoming signal, and can be helpful with ascertaining mono compatibility. Dots within the central 90° 'wedge' are in phase, while those outside it are out of phase. Thus, a centered mono signal will appear as a vertical line, while a 180° out-of-phase stereo signal will appear as a flat horizontal line.



Note that the Vectorscope is positioned at WidthShaper's final output, so it doesn't specifically represent the output of the currently selected band. To visualize an individual band, simply solo it in the Multiband Editor.

Shaper Selection Screen

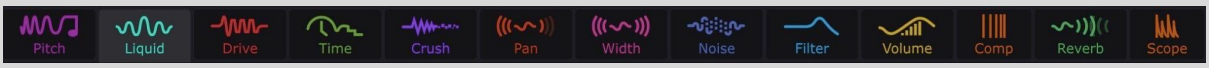
The first thing you see when you launch ShaperBox 3 is the Shaper Selection Screen. Here, you can add any Shapers you own to the effects chain, and try out any you don't in demo mode. If you prefer, you can hide demo Shapers with the 'Show Full Versions Only' button.

TimeShaper, VolumeShaper and ReverbShaper offer convenient Quick Presets, accessed using the buttons underneath their logos. These give you one-click access to four essential processes: **Half-time**, **Sidechain**, **Trim** and **Send**.

If you would prefer ShaperBox 3 to always open up with a particular Shaper or Quick Preset loaded, select it in the **Startup** section of the **Main Menu** (☰).

Note: You can also set a preset to be the starting preset by right-clicking it in the Preset Browser.

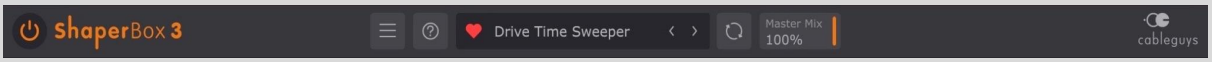
Shaper Bar



The Shaper Bar holds all currently loaded Shapers, with the signal flowing through them from left to right.

- Click to select a Shaper for editing, drag to change the order, or click '+' to add more Shapers (not available if you have already loaded all Shapers).
- Hover to access Remove Shaper or Shaper On/Off. Note that Shaper On/Off can be automated using your DAW's automation system.

Top Bar



The Top Bar houses the Master Mix and Bypass controls, Main Menu and Wave-Editing Quick Guide toggle, as well as providing access to and syncing of the preset library.

- **Master Bypass:** Switch between the full dry signal and the dry/wet balance set by the Master Mix control. The switch is always smooth and click-free, and thus amenable to automation.
- **Main Menu**: Access various preferences and settings. See below for details.
- **Wave editing quick guide**: Click the **?** icon to open the wave editing quick guide, which lists the point creation and modification options available in the wave editor.
- **Preset Library**: Click the central bar to open the **Preset Library**, and click the heart icon to Favorite or un-Favourite the current preset.
- **Preset Library Sync**: Click the circular arrows icon to download new presets by Cableguys, and upload your own presets for backup (other users cannot access them).
- **Master Mix**: Set the overall strength of ShaperBox's processing. This works by internally adjusting the Mix level of every band of every Shaper in the chain. As well as providing an easy and automatable way to control the dry/wet mix of ShaperBox as a whole, this also enables exciting 'morphing' effects with complex Shaper chains, passing the blend through intriguing 'in-between' states. Since the signal always passes through the multiband network, there are no phasing artifacts when using Master Mix with multiband setups. If you need to hear only the true dry signal, click the **Master Bypass** button.

Preset Library

ShaperBox 3 ships with a large library of professionally designed presets, with new presets regularly added by Cableguys' in-house sound designers, via the Cableguys Preset Cloud, to stimulate your creativity. You can also access the Legacy presets of ShaperBox 1 and 2.

Loading a preset always loads a complete ShaperBox setup, replacing all current Shapers and their settings. Presets include any Wave Palette Slot assignments too.

The current preset is shown in the center of the top bar. Step through presets based on your current Preset Filter setting using the **<** and **>** buttons to the right of the preset name.

Click the preset name to open and close the full Preset Browser.

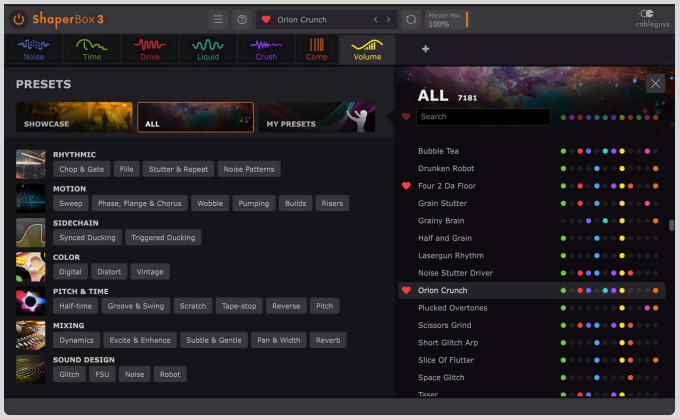
Click the ☰ button to the left to open the Main Menu, which contains various preset-related operations, amongst other functions.

Preset Browser

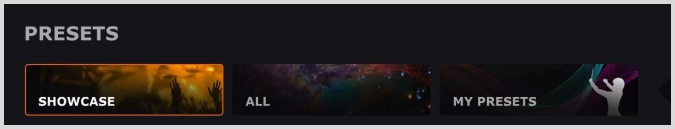
Find both useful everyday setups and inspirational effects with ShaperBox 3's Preset Browser.

The left hand side of the Preset Browser enables narrowing down of the presets displayed in the list on the right hand side via a series of Categories and Packs.

To close the Preset Browser, click the X at the top right corner.



Categories

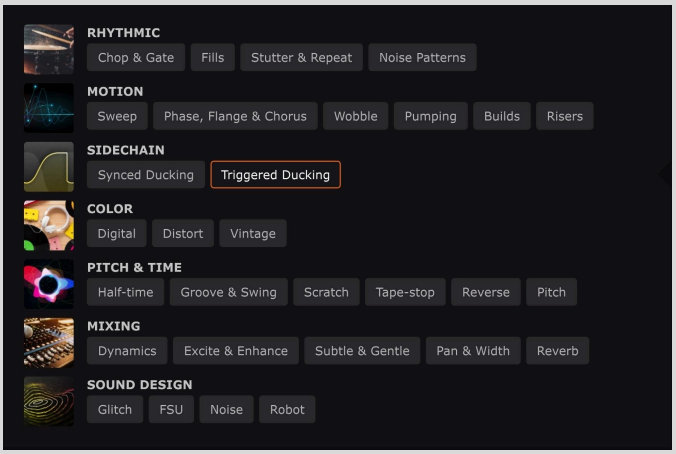


Along the top, the **Showcase** and **My Presets** buttons filter the list down to those presets selected by our in-house sound designers as a best-of-the-best showcase – a great starting point for your ShaperBox explorations – or your own saved user presets. Select the **All** filter to show the full library of presets, including those created by you.

You can rename or delete your own presets by clicking the ••• button that appears to the right of the preset name when moused over. And you can designate any preset to be the one that loads by default when ShaperBox 3 is launched by right-clicking it and selecting 'Use as startup preset'.

Packs

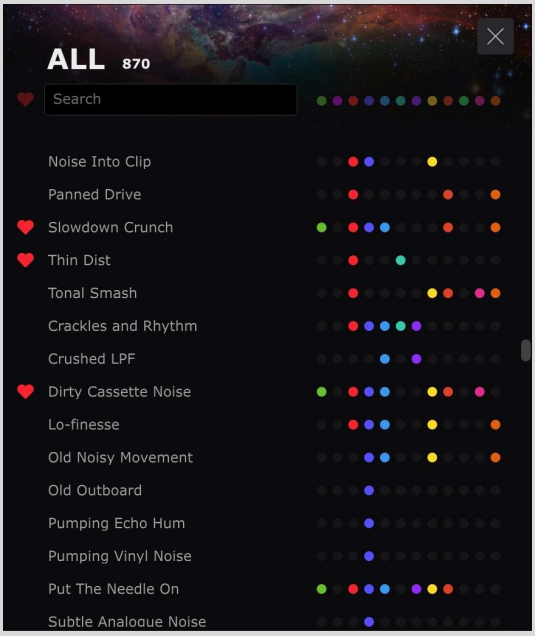
Below the Categories, the **Rhythmic**, **Motion**, **Sidechain**, **Color**, **Pitch & time**, **Mixing** and **Sound Design** sections each comprise a set of Packs for narrowing the preset list down to designated collections of sonic effects and treatments. Click a Tag to see only presets that adhere to its particular technical or stylistic qualification in the right-hand list, and click any Category to clear all Packs.



Preset list

The right-hand side of the Preset Library is home to the presets themselves, as filtered via the Categories and Packs. The title of the currently active Category or Tag, and the number of presets it contains, appears at the top of the list. To load a preset, double-click it.

To the right of each preset name, every Shaper used in that preset is represented by a dot of its characteristic color.



Favorite presets

Mousing over a preset reveals a gray heart icon – click this to designate that preset as a Favorite. To filter the preset list down to show only Favorites, click the heart icon at the left-hand end of the Search bar.

Searching presets and filtering by Shaper

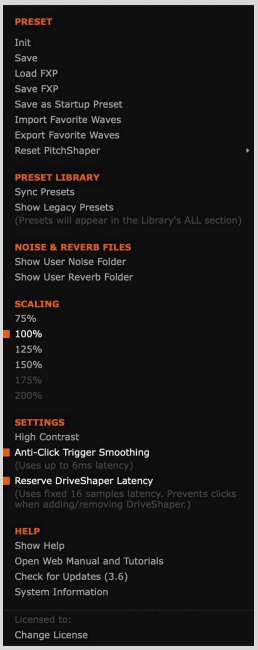
The Preset Library's Search function lets you narrow down the preset list based on text entered in the 'Search preset names' field.

You can further filter the results down to only qualifying presets also designated as Favorites by clicking the heart icon to the left, and to presets containing or not containing a particular Shaper (on its own or in combination with others) by clicking that Shaper's representative coloured dot to the right. Left-clicking a dot narrows the list down to only presets containing that Shaper (a collar appears around the dot), while right-clicking (or clicking with any modifier key held) a dot *excludes* all presets containing that Shaper from the list (the dot is struck through). Any combination of 'included' and 'excluded' Shapers is possible, and you can drag through the dots to include/exclude multiple Shapers at once. Click the 'X' button at the right hand end of the row to clear the selection.

Main Menu

- **Preset**
  - **Init:** Want to start from scratch? This removes all Shapers and resets ShaperBox 3 to its default state.
  - **Save:** Store your preset within the local Cableguys library database.
  - **Load FXP**: Browse to and load a stored preset in the FXP file format.

- **Save FXP**: Save the current preset to your hard drive as an FXP file, for discrete storage and sharing.
- **Save as Startup Preset**: Save the current ShaperBox setup as the default preset that loads on startup. Note: This feature isn't available in ShaperBox 3 AAX.
- **Remove Startup Preset**: Delete the currently stored Startup Preset, restoring the default Init preset. (Only appears when a Startup Preset has been saved.) Note: This feature isn't available in ShaperBox 3 AAX.
- **Import Favorite Waves**: Import a stored Favorite Waves file. Note that this will overwrite your current Favorite Waves.
- **Export Favorite Waves**: Export your Favorite Waves as a discrete file for storage and portability.
- **Reset Shaper**: Revert the selected Shaper to its Init preset or a Quick Preset.



- **Preset Library**
  - **Sync Presets**: Selecting this menu option (or clicking the **Sync** button in the top bar) will download all new Cableguys presets, and upload/update all your presets for backup purposes.
  - **Show Legacy Presets**: Make the ShaperBox 1 and 2 preset libraries available in the **All** section of the Preset Library, prefixed with 'SB1' and 'SB2' respectively. You may need to Sync the Library once to import them.

- **Noise & Reverb files**
  - **Show User Noise Folder:** Open NoiseShaper's **User Noises** folder in Windows File Explorer/macOS Finder. Place WAV/AIF/AIFF/FLAC files here and they will appear in NoiseShaper's **Type** menu, in the rightmost User section. Refer to the **User noise import** section of this manual for further details.
  - **Show User Reverb Folder:** Open ReverbShaper's **User Reverbs** folder in Windows File Explorer/macOS Finder. Place WAV and/or AIFF format impulse response files here and they will appear in ReverbShaper's **Reverb** menu, in the rightmost User section. Refer to the **User impulse response import** section of this manual for further details.

- **Scaling**
  - **75-200%:** Scale the ShaperBox GUI up or down to suit your monitor resolution. Only Scaling percentages that won't exceed your display resolution are made available – the rest are grayed out.

- **Settings**
  - **Use OpenGL Graphics (Windows only):** Enable this for improved UI performance. We recommend leaving it off, however, as it comes with a couple of caveats:
    - Due to a bug in some graphics drivers, using OpenGL may at some point result in graphical problems within the plugin's interface. If this

happens and you cannot access the Main menu any more, please see our **FAQ page** to find out how to disable OpenGL for the plugin.
        - Ableton Live may freeze when its Spectrum device is enlarged while the ShaperBox interface is open.
    - **High Contrast**: Increase the contrast of certain GUI elements for better visibility in bright environments. Requires the GUI to be closed and reopened.
    - **Anti-Click Trigger Smoothing**: On by default, this alleviates any clicks that might arise when retriggering LFOs with MIDI or audio. In VolumeShaper, this adds 6ms of lookahead in **Audio** and **MIDI** mode, so disabling it will reduce latency by 6ms, yielding 14ms ('Drums' and 'General' algorithms) or 24ms ('Complex' algorithm) latency in **Audio** mode, and no latency in **MIDI** mode.
    - **Reserve DriveShaper Latency**: Impose 16 samples of latency, so that loading DriveShaper (which always adds 16 samples of latency) makes no difference to the overall latency of ShaperBox. When disabled, ShaperBox operates at zero latency – as long as DriveShaper isn't loaded and Audio trigger mode isn't being used. Most DAWs compensate correctly for latency, so this setting has no practical effect. However, some DAWs (for example, Ableton Live and Logic Pro X) have known problems with latency compensation, for which zero latency can be helpful. Note that Live's latency display may not update when ShaperBox switches from 16 to 0 samples or vice versa, even though the audio is correctly processed.

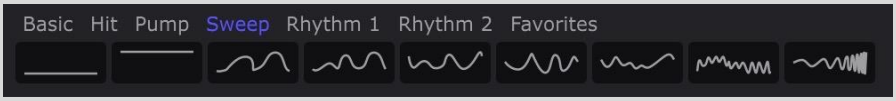
- **Help**
    - **Show Help**: Open the built-in wave-editing Quick Guide.
    - **Open Web Manual and Tutorials**: Access this manual and video guides.
    - **Check for Updates**: Ensure your ShaperBox 3 is up to date. This takes care of all Shapers – you don't need to update each one separately.
    - **System Information**: Opens a detailed description of your system setup for information and support purposes. Click the **Copy** button to copy the System Information to your clipboard.
    - **Change License**: Switch your current ShaperBox 3 license for a different one.

Help Bar

At the bottom of the GUI, the Help bar serves as a quick reference guide directly within the plugin. The information it provides depends on what you place the mouse pointer over:

- **Controls**: A brief description of the control, including available settings where applicable.
- **Preset waveforms**: The name of the preset waveform.
- **LFO waveform point**: The position of the point on the graph in beats, hundredths of beats and milliseconds; and the value of the controlled parameter at that point.

Wave Presets



Each Shaper has its own specially designed Wave Presets. These are simpler than Library Presets, loading an LFO waveform into the current Shaper without changing any other settings. Holding the **Shift** key while selecting a Wave Preset will scale the waveform to the range covered by the existing wave in that LFO on the Y axis (height) – useful for trying out Wave Presets while maintaining a consistent 'depth' of processing.

Wave Presets are categorized. For example, VolumeShaper has categories (shown above) for Sidechain (sidechain ducking/pumping), Trimming (for shortening and shaping the envelope of a sound), Rhythmic 1 & 2 (adding groove and motion), and Basic (standard synth-style waveforms: saw, square, etc).

💡 Study each Shaper's Wave Presets to learn which shapes create which effects – this is especially useful for TimeShaper.

Favorites

You can store your own Wave Presets in each Shaper's **Favorites** category. Waves saved here are available across all instances of ShaperBox, and are stored permanently until you remove or replace them. Click the 'downwards arrow' icon that appears when you mouse over a Favorite Wave Slot to store the current Wave there. Load any Favorite Wave by clicking it. Hover on a stored Favorite Wave for Store and Remove options.

You can export and import complete sets of Favorite Waves via the **Main Menu**. Since Favorite Waves are not part of ShaperBox's Preset Library, they are not stored as part of the cloud sync system, so this is very helpful when setting up ShaperBox on a new computer, as well as for sharing them with others.

Wave Palette

Opposite the fixed Wave Presets is the Wave Palette, in which up to nine LFO waveforms can be stored as part of the current ShaperBox preset, and switched on the fly via MIDI.

Click the 'downwards arrow' icon that appears when you mouse over a Wave Palette Slot to store the current waveform there. Load any stored waveform by clicking it, or **SHIFT**-click it to constrain it to the height of the currently loaded waveform. Hover on a stored waveform for Store and Remove options.

When the **MIDI Switch** option is enabled, the Wave Palette looks like this:

Now MIDI notes C# to A will load the corresponding waveform into the Shaper from which it was originally saved (as indicated by its color), turning ShaperBox 3 into a performance effect – trigger it via your MIDI keyboard, pads, or other device. Or, trigger via MIDI clips in your DAW to change waves in sync with your song.

If you are using Shapers in multiband mode (see **Multiband Editor**, below), the color indicates both the Shaper and the band into which the waveform will be loaded. This makes it easy to load different waveforms into different bands of the same Shaper.

Once you've created a great setup for jamming or live use, simply save it as a Library Preset – your Wave Palette and all its Shaper assignments will be stored with it.

The cog icon next to the MIDI Switch On button opens a screen with MIDI input configuration and additional help – see **MIDI Setup**, below.

The Wave Palette can also be switched using automation. Unlike **MIDI Switch**, however, any of the 9 waves can be loaded into any LFO of any Shaper. This is because each LFO has its own automation parameter for wave switching – for example, 'Filter Cutoff High Wave'.

Here are just a few creative ways to use MIDI or automated wave-switching:

- Switch FilterShaper Core patterns, from smooth sweeps, to fast wobbles and complex rhythms, to create a live 'wobble machine'.
- Store a few TimeShaper stutters and repeats to create wild glitch effects on the fly.
- Use VolumeShaper to apply a 'trance gate' effect to a synth pad, and switch between different waveforms/rhythms.
- Switch sidechain curves in VolumeShaper depending on the part of the song, or kick drum being used (eg, a different kick for your breakdown or intro).

💡 TIP: Why does the MIDI Switch key range start at C# and not C? Because C is reserved for the MIDI Trigger feature, which restarts the LFO waveform (explained later in this manual). That means you can use both MIDI Switch and MIDI Trigger features at the same time.

Shaper Oscilloscope

Not to be confused with the **Oscilloscope Tool**, each Shaper has a sample-accurate oscilloscope that displays the input (gray) and processed (colored) audio signals. By default, the Shaper Oscilloscope is set to the most appropriate waveform view mode for the Shaper.

You can switch to any of the other view modes in the Wave/Oscilloscope Menu (right-click in the LFO Wave Editor). See the **Wave/Oscilloscope Menu** section below for full details.

Magnitude mode is especially useful when dialing in the Compressor Tool and the Envelope Followers found in most Shapers. For this reason, the Compressor is always in Magnitude

mode, and when the mouse pointer is over an Envelope Follower control, Magnitude mode is enabled temporarily.

If the Sidechain Input is active in the Shaper's Envelope Follower (or in the Compressor tool), moving the mouse pointer over the **Threshold** control or Envelope Filter/Sidechain section will switch the Oscilloscope to temporarily show the filtered sidechain input signal instead of the regular input/output.

LFO Wave Editor

ShaperBox 3 features a powerful system for designing and editing your own LFO waveforms in exquisite detail. Create smooth curves, peaks, cuts and slopes using soft or hard breakpoints to define gentle transitions or sharp bends in the wave. Or, use three Pens to freely draw, adjust and sequence steps, ramps, arcs and S-curves.

LFO waveforms are made up of freely adjustable "points" (aka nodes or breakpoints). There are three weights of point:

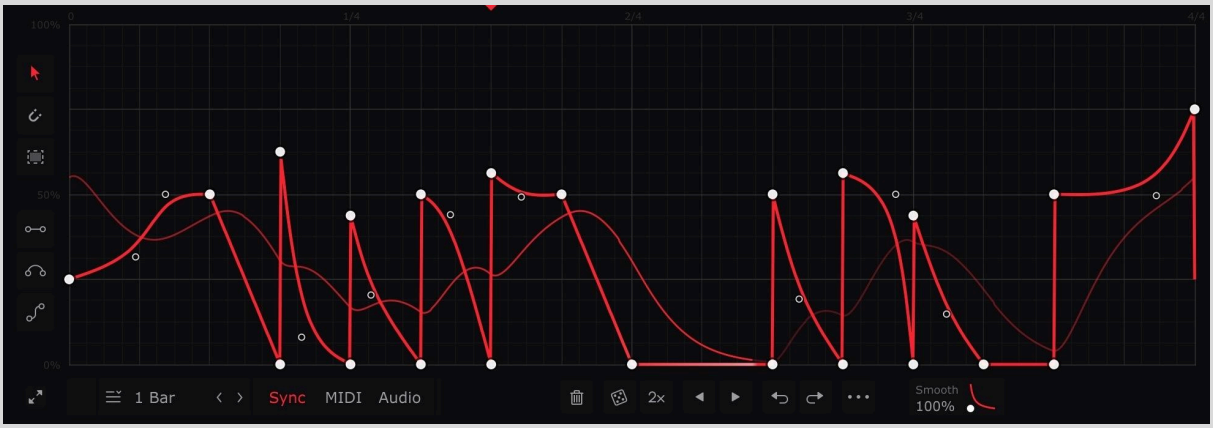
● Hard: Creates a tight angle. Extremely precise, but can cause clicks due to the instantaneous parameter change.

• Medium: The angle is rounded off slightly – great for 'instant' jumps without clicking.

○ Soft: For smooth, flowing curves – create sweeping modulations, soft pulses and gradual changes.

Using these, any LFO shape can be created, from stepped staircases to gentle, pulsing curves, or any combination thereof.

Modulation Trace



The 'closeness' with which the final modulation curve tracks the LFO waveform is affected by the **Smooth** control (and – albeit in a different fashion – the **Envelope Follower**). The animated Modulation Trace behind the LFO waveform in the Wave Editor shows the final modulation output, and if you don't see it, it means the modulation is simply tracking the LFO waveform 1:1, or is so close that the thickness of the LFO waveform obscures it. Raise

the **Smooth** control, though, and once it exceeds a certain point (dependent on the speed of the LFO), you'll see the Modulation Trace begin to average out, until, at *really* high LFO rates, it ultimately flattens out entirely.

In the screenshot above, the LFO is running at 1 Bar **Loop Length** with **Smooth** set to 100%, which radically pulls the modulation away from the strict shape of the LFO waveform, as shown by the Modulation Trace in the background.

LFO Tool Strip

The LFO Tool Strip contains tools used to create and edit waveforms in the Wave Editor. From top to bottom:

- **Pointer:** Click to create and edit points without snapping them to the background grid, and drag to select multiple points – see *How to edit points with the Pointer tool* below.
- **Snap to grid**: When active, newly added and dragged points are snapped to the background grid. This is a global setting applied to all Shapers, apart from PitchShaper, with which you'll often want to adhere to discrete musical intervals, even while other Shapers are kept unsnapped for freeform modulation editing.
- **Select all points:** Click the button to select all points. See *Working with selections*, below, for a run-down of the operations and modifier keys that can be applied to multiple selected points. A diagonal line appears in the **Select all points** button whenever any points are selected.
- **Line Pen:** Draw, adjust and repeat lines – see *How to use Pens* below.
- **Arc Pen:** Draw, adjust and repeat curved arcs – see *How to use Pens* below.
- **S-Curve Pen:** Draw, adjust and repeat S-shaped curves – see *How to use Pens* below.

LFO Control Strip

The LFO Control Strip enables various further functions to be applied to the waveform. From left to right:

- **Delete Points:** Remove all points, or the selected points.
- **Randomize wave points**: Assigns random positions and weights to all points, or the selected points. No points are removed or added, but points snap to the background grid if Snap to grid is active, and when randomizing a selection, the left- and right-most points only move vertically, so as to keep the selection width consistent. **SHIFT**-click to move points vertically only, preserving the rhythm.
- **2x:** 'Double-time' the selection or the entire waveform. **SHIFT**-click to 'triple-time'.
- **Move wave/selection left/right**: Shift the selection or entire wave one grid space left or right. Hold **SHIFT** for precise adjustment (1/16th of a grid space).

- **Undo/redo**: Step back and forth through your edits. Works on a per-Shaper/band basis.
- **•••:** Open the Wave/Oscilloscope menu – see below.

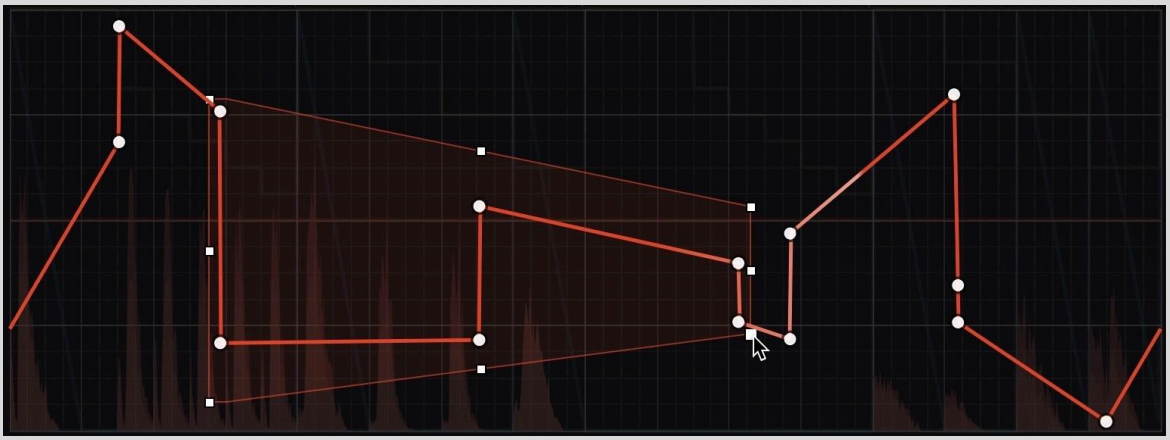
💡 TIP: Minutely shifting the wave left/right using the Move function can help in fine-tuning the response of sidechaining curves in VolumeShaper – just a little earlier or later can make a real difference to the groove and tightness.

How to edit points with the Pointer tool

- **Create line**: Click once anywhere
- **Create curve**: Drag on the line
- **Toggle line/curve**: Click breakpoint
- **Move breakpoint**: Drag
- **Delete breakpoint**: Double-click
- **Soften angle**: Shift-click breakpoint
- **Add soft point**: Ctrl-click anywhere
- **Selection**: Drag in empty space
- **Temporary snap**: Hold Shift

Right-clicking a point opens a menu via which you can switch it between Soft, Medium and Hard weights, and delete it.

Working with selections



Select multiple points by **dragging** the Pointer. You can then move and scale the points by dragging the box or the handles around its edges – great for easily changing the intensity or 'amount' of an effect. Hold **ALT/OPTION** to lock to vertical movement only, or **ALT/OPTION-CTRL** for horizontal lock. Hold **ALT/OPTION** while stretching to scale about the center. Hold **CTRL** while stretching a side handle to skew the selection, and hold **ALT/OPTION-CTRL** to skew about the center.

💡 TIP: Click the '?' icon in the top bar to access a quick wave-editing guide right inside ShaperBox 3.

How to use Pens

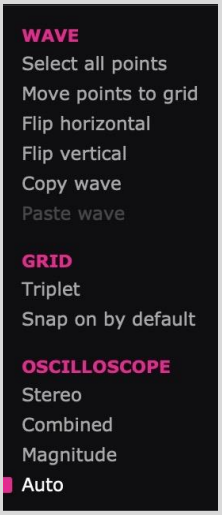
ShaperBox 3's three Pens enable lines, arcs and S-curves to be created, manipulated and repeated in the waveform. They all work in the same way, with a simple, intuitive workflow.

- **Click once** to add a line, arc or S-curve at the location shown by the white visual preview.
- **Click again** without moving the mouse to add the same shape again, right after the first. Repeat as required!
- **Click-drag** to change the length and height of the Pen shape. Note that if you drag far enough left, the shape will be flipped around (and clicking to repeat will move from right to left!). The Pen will retain its shape until edited again.
- **Hold SHIFT** to switch temporarily to the Pointer tool, to edit the waveform or work with selections.
- Pens always snap to the grid.

Wave/Oscilloscope Menu

Right-click any empty area in the Wave Editor, or click the ••• button in the Wave Editor Tool Strip to open this menu.

- **Wave**
  - **Select all points**: Creates a selection around all points in the Wave – the same as **SHIFT**-clicking the Selection tool button.
  - **Move points to grid**: Snaps selected points (or all points if none are selected) to the grid.
  - **Flip horizontal**: Reverse the wave/selection in time.
  - **Flip vertical**: Invert the wave/selection.
  - **Copy/Paste wave**: Transfer waves between Shapers, bands within Shapers, other instances of ShaperBox (regardless of host DAWs and plugin formats), and even other Cableguys plugins (versions of FilterShaper XL and MidiShaper released after April 2024). Holding the **Shift** key while selecting **Paste wave** will scale the pasted wave to the range covered by the LFO's existing wave on the Y axis (height) – useful for trying different waves while maintaining a consistent 'depth' of processing.



- **Grid**
  - **Triplet**: Change the snap grid to triplet time – useful for shuffle/swing rhythms.
  - **Snap on by default**: When selected, the **Snap to grid** function will be active in newly loaded Shapers and instances of ShaperBox.
  - **Snap Pitch by default** (PitchShaper only): When selected, the **Snap to grid** function will be active in newly loaded instances of PitchShaper. The reason PitchShaper has its own Snap default setting is so that you can have it always

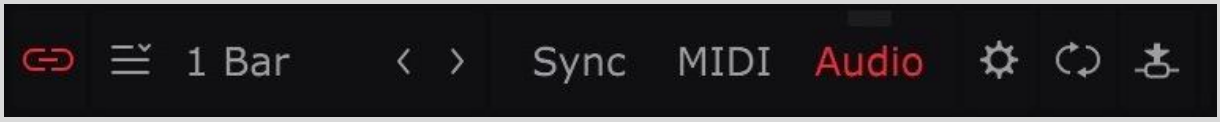
open with the LFO waveform locked to semitones, but maintain freeform modulation editing in all other Shapers.

- **Oscilloscope**
  - **Stereo**: Shows the left and right channels separately.
  - **Combined**: Shows the left and right signals overlaid.
  - **Magnitude**: The 'half waveform' view, showing the highest amplitude at any given moment out of the left and right channels.
  - **Auto (default)**: When enabled, automatically uses an appropriate default Oscilloscope view for each Shaper.

💡 TIP: Create a 'trimming' wave in VolumeShaper, so you hear only the hi-hats in a loop – then flip the wave vertically to exclude the hi-hats. This works great when applied only to the treble band.

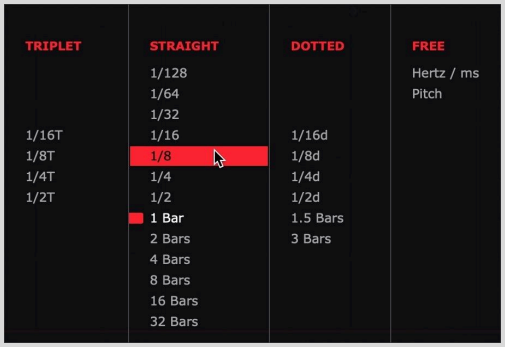
💡 TIP: With all points selected, you can adjust the intensity of the waveform by stretching it vertically, or speed it up/slow it down by stretching it over time (for example, to turn a half-bar pattern into a full-bar one). Hold **ALT** while stretching to scale about the center.

LFO Settings



This section gives you control over when the waveform starts over, and the length of the LFO cycle. You can set it free-running, synced to the tempo of your DAW, or even to the frequency (pitch) of a MIDI note you're playing, to create everything from long, evolving sweeps to freaky ring modulation-style effects.

LFO Mode, Length and MIDI Trigger are set independently per Shaper – in fact, when unlinked, each band inside a Shaper can have its own settings.

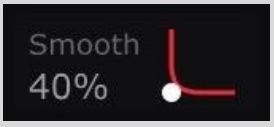


- **LFO Mode**
  - **Bars/Beats**: The LFO syncs to the host DAW's clock, looping at the Triplet, Straight or Dotted note value or number of bars selected from the Loop Length menus. Step through the menus using the **<** and **>** buttons to the right.
  - **Hertz / ms**: The LFO rate is set in Hertz (cycles per second), and the LFO Length menu is replaced by a Speed parameter. In Hertz mode, the LFO is 'synced' to project position once when you hit play, for consistent-sounding playback from a given position.

- **Pitch**: The LFO speed will be set to the frequency of the MIDI note you play. Try it for bizarre ring modulation-style effects! When Pitch is selected, the Trigger mode switches automatically to **MIDI**.
- **LFO Link** : To set the LFO for multiple Shaper bands to the same settings, activate the Link icon, which becomes visible if you have more than one band. You can automate all linked LFO controls via the Mid band's LFO parameters. Link affects the LFO Mode, Length/Speed and Trigger Mode.

- **LFO Loop Length/Speed**
  - **Loop Length (1/128–32 Bars)**: In Bars/Beats mode, set the length of the loop, from 1/128 to 32 bars. The 1/4, 1/2 and 1 buttons give instant 1-click access to the three most commonly used timings.
  - **Speed (0.02–5.24kHz)**: In Hertz mode, set the free-running LFO rate.
  - **Transpose (-3–+3 Octaves)**: In Pitch mode, transpose the incoming MIDI notes by up to +/-3 octaves. Useful for AM/FM-type effects.

- **Smooth:** Progressively soften any hard angles in the LFO waveform. Use this to reduce click/pop artifacts resulting from sudden value changes, or for creative effect. The effect of the Smooth setting is visualised in the [Modulation Trace](#).



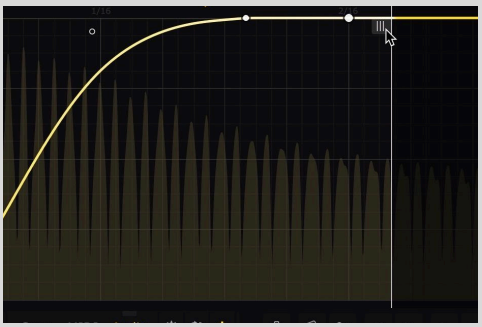
  Note: TimeShaper does not feature the Smoothing control, instead having a dedicated 'Smooth' **Step Mode** option for reducing clicks.

  Trigger Mode

  - **Sync**: The default mode. The LFO locks to your project's tempo and play position, and the LFO Length is set in musical units (bars and beats) or Hertz / ms – see **LFO Mode** above.
  - **MIDI**: Every incoming MIDI note triggers/restarts the LFO, unless the Wave Palette **MIDI Switch** is active, in which case only the note C retriggers the LFO. Open the **MIDI Setup** panel with the 'cogwheel' button to the right.
  - **Audio**: Incoming audio transients trigger the LFO, restarting it every time a new transient is detected. Open the **Global Audio Triggering Setup** panel with the small 'cogwheel' button to the right, and activate the **External Sidechain Input** with the button.

- **Looping**
  - **On**: The LFO loops continuously, but resets to the start when a MIDI note or audio trigger is received.
  - **Off (1-Shot)**: The LFO does not loop, but will play once when a MIDI note or audio trigger is received, then remain at the final value of the waveform, as set by the End Marker.

- **End Marker**: When **MIDI** or **Audio** triggering is active and **Loop** is off, you can adjust where the LFO waveform 'stops' by dragging the **End** marker left and right in the waveform display. The parameter effectively



freezes when it reaches the End marker, remaining at that value until it's triggered again.

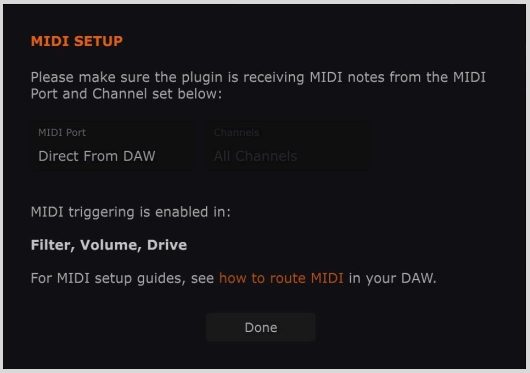
For the MIDI Trigger modes, any note will work, **except** when ShaperBox's MIDI Switch option is enabled too, in which case only C notes will reset the LFO.

💡 TIP: Note that Ableton Live has a serious bug concerning timing that can affect all position-synced plugins (ie, not just Cableguys plugins). For more info, see our **FAQ page** for a workaround.

💡 TIP: The LFO Link function is great for easy editing and ensuring that your LFOs stay in sync across bands. However, exciting rhythmic effects can be achieved by disabling it. Try copying the same Wave to all bands, but using different Loop Lengths for each. Or combining a beat-synced pattern in one band with audio-rate modulation on another.

MIDI Setup

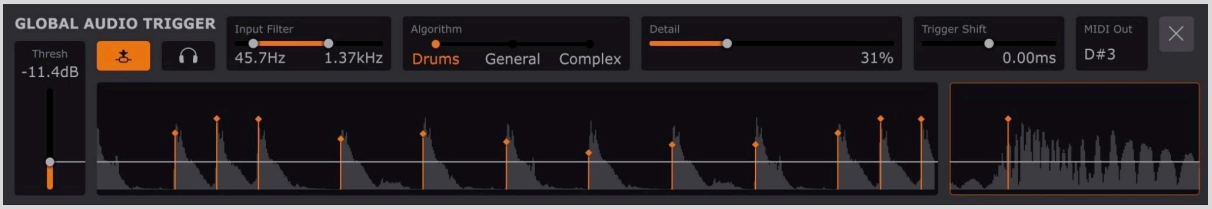
For instructions on setting your DAW up to send MIDI to ShaperBox 3, visit our **FAQ page**.



Open the MIDI Setup screen by clicking the 'cog' button that appears when **MIDI Trigger**, **MIDI Switch** and/or LFO **Pitch** mode are active.

- **MIDI Port**
  - **Direct From DAW**: This is the best option if supported by your DAW, as it gives the tightest possible timing.
  - **MIDI Devices**: If your DAW doesn't support the **Direct From DAW** option, assign a MIDI input port from those available to your system. The timing may not be as tight, though, and you'll need to return to this screen if ports are added or removed.
  - **Channels:** Select All Channels, or any individual MIDI channel from 1-16 for input.

Audio Trigger Setup



In Audio Triggering mode, ShaperBox 3's LFOs are triggered by transients in the input audio signal or an external audio signal routed into the plugin via the sidechain. Every time a transient is detected (and it also exceeds the specified threshold), the LFO restarts, making it possible to create complex FX that follow the rhythm of drum and percussion loops, instrumental tracks, live input, etc.

For instructions on setting your DAW up to send audio to ShaperBox 3's external sidechain input, please visit the **ShaperBox 3 tutorials page**.

Open ShaperBox 3's Global Audio Triggering Setup screen by clicking the small 'cog' button that appears to the right of the **Audio** Trigger button when it's activated. Close it by clicking the X button at the top right of the screen. All of these settings are shared by all Shapers.

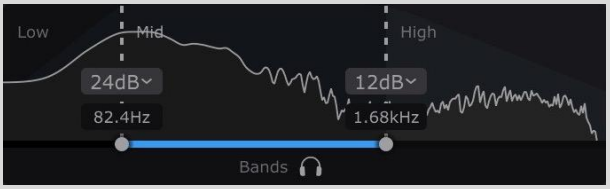
- **Threshold:** Set the volume level in dB that incoming transients have to exceed to trigger the LFO. Transients below the Threshold will not trigger the LFO.
- **Sidechain Input**: Activate the external sidechain input for audio triggering, enabling any track in your DAW project to be routed into ShaperBox as a trigger signal. Duck the bassline every time the kick drum hits, for example, or imprint the rhythm of a percussion line onto a synth pad.
- **Monitor Input**: Listen to the signal going into the transient detector, including filtering and external sidechain routing. This is useful when you need to hear exactly what the transient detector is 'hearing' in order to surgically tailor the trigger signal using the High/Low Filters.
- **High/Low Filters**: This double-ended slider sets the range of frequencies the transient detector will respond to. Cut the lows to minimize mistriggers from heavy bass, or the highs to ignore hi-hats, for example. Focus on the range 200-300Hz to trigger from the snare.
- **Algorithm**
    - **Drums**: Optimized for transient-heavy material like drums or percussion.
    - **General**: A 'general purpose' transient detection algorithm for use with source material of all kinds.
    - **Complex**: The most sensitive transient detection algorithm, for use with full mixes and multi-layered loops.

- **Detail**: Adjust the sensitivity of the transient detection to suit your source material. Increase to capture finer details such as fast rolls and ghost notes.
- **Trigger Shift**: Trigger the LFO up to 4ms ahead of or behind the detected transient position. This is useful for giving the detected transient position a 'nudge' if the detected position doesn't land exactly where you would expect, due to the nature of the source signal.

- **MIDI Out**: Select a MIDI note to be output whenever a transient is detected. This is useful for triggering other plugins, or recording the notes to a MIDI track then using that track to trigger ShaperBox via MIDI for precise control. Note that some DAWs, including Logic Pro, do not allow audio plugins to output MIDI.

Multiband Editor

Multiband processing brings a powerful extra dimension to every Shaper, dividing the input signal into three completely separate and independently 'shaped' frequency bands.



Here are just a few of the countless things you can do using multiband processing:

- **Bass sidechaining:** Duck just the bass by homing in on it with VolumeShaper's low band, leaving all other frequencies in the signal unaffected. Get tighter bass and keep the top-end groove.
- **Multi-spectrum sidechaining:** Apply different sidechain ducking curves to each VolumeShaper frequency range – go long on the bass, medium length in the mids, and short at the top, allowing your kick to punch through with total precision.
- **Get wide but solid bass:** Use WidthShaper to widen the higher frequencies in a bassline while keeping the lows mono and centered.
- **Solve troublesome dynamics issues:** The Compressor Tool becomes even more powerful in multiband, helping you tame even the most dynamically wayward of material. Simply set the Split sliders to target the frequency range of whichever element is jumping out – 'jumpy' midrange resonances in a vocal, for example – and set the Compressor for that band as required.
- **Animate arpeggios:** Set PanShaper to divide an arpeggiated synth, piano or guitar into three 'note ranges', then apply different envelope follower Amounts to each for multi-directional panning based on note input.
- **Extreme time shaping:** Deconstruct the very temporal fabric of a drum loop by pushing it through TimeShaper with totally different LFO waveforms for each band.
- **Add interest to pads:** Apply LiquidShaper's Phaser to just the midrange in a complex pad sound for a combination of psychedelia and stability.

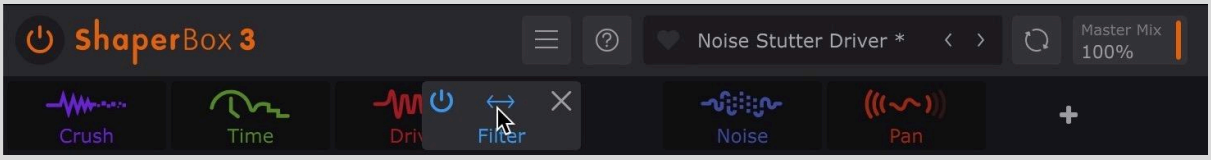
That barely scratches the surface of ShaperBox's multiband possibilities – the only limit is your imagination!

ShaperBox 3's multiband setup is designed with ease of use in mind. The three bands are defined in the Bands section at the top-left of the interface, which also shows the audio spectrum and modulation signal level for each one.

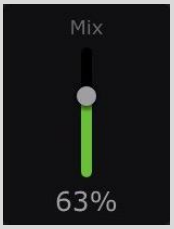
- **Split sliders**: Add a low or high band by moving a Split slider to the desired frequency. You can also change the slope of each filter split to 6dB, 12dB or 24dB/octave — this option becomes visible when you move the mouse over the spectrum. The exact split frequencies are shown in the help text area at the bottom of the plugin when you mouse-over the band split.

- **Solo** 🎧: Solo the selected band – the other bands in the Shaper are muted. Click between bands to instantly solo them.

Routing And Mixing



Do you want a filtered stutter or a stuttered filter? The order of the effects can make a huge difference to what you get out of them, and experimenting with this is very easy in ShaperBox 3 – just drag Shapers in the Shaper bar to change the left-to-right processing order.



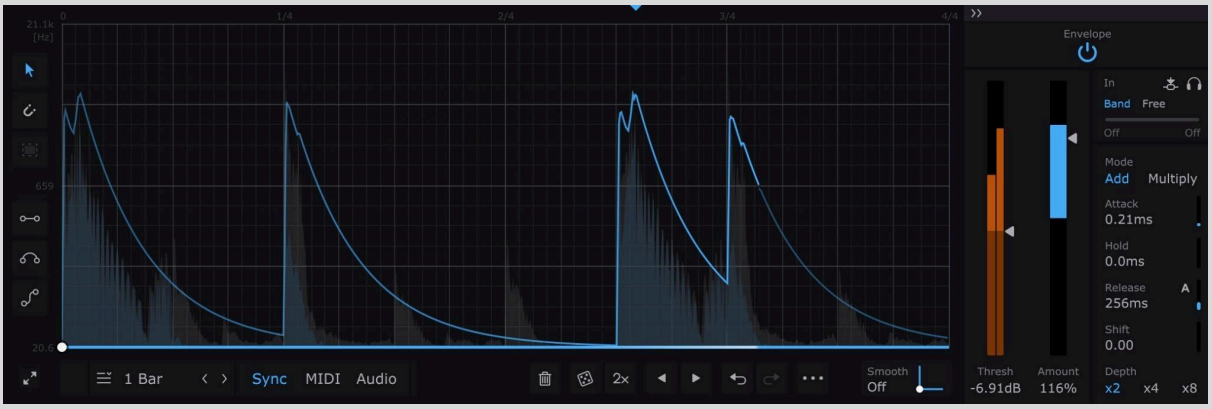
Each Shaper has its own dry/wet Mix control in the upper-right of the interface. This blends the signal coming into the Shaper with its output. In fact, there is a Mix control for each band when using Shapers in Multiband mode.

With Volume, Pan and Width Shapers, the dry/wet Mix works like an 'amount' control, making the effect less pronounced the lower it goes – the result is exactly the same as if the modulation curve had been flattened vertically. Lowering the Mix slider also has a profound effect on the Compressor, enabling parallel, a.k.a. New York-style, compression. (PanShaper's Haas effect is an exception to this, however, as, rather than flattening the curve, it mixes its slightly-delayed output with the dry signal, which can introduce phasing artifacts.)

With Pitch, Filter, Drive, Crush, Liquid, Noise, Reverb and Time Shapers, blending the Dry and Wet signals has the potential for much more drastic effects.

💡 TIP: As mentioned earlier, the Master Mix in the top bar works differently to the individual Mix sliders. Master Mix internally offsets the Mix levels for every band of every Shaper at once. If, for example, you have DriveShaper, VolumeShaper and CrushShaper's Mix controls set to 100%, 50% and 20% respectively, and you set Master Mix to 50%, the three Shapers will output at 50%, 25% and 10%.

Envelope Follower



So far, we have only looked at ShaperBox 3's LFOs. LFOs work by imposing a *fixed* modulation shape onto the audio, regardless of what the audio is actually doing. Envelope Followers are different: they follow the amplitude envelope (the peaks and troughs of the waveform) of the audio to create a *dynamic* modulation curve from the audio itself.

If that's a little hard to understand, check out the graph above. In this example, FilterShaper Core's filter opens (ie, raises the filter cutoff) every time there is a loud hit in the incoming drum loop, then closes gradually afterwards.

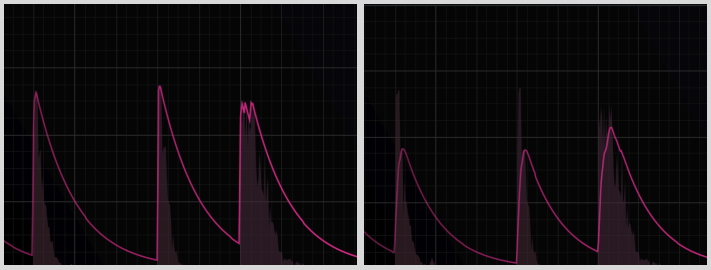
Envelope Followers are found in DriveShaper, PitchShaper, FilterShaper Core, CrushShaper, NoiseShaper, PanShaper and WidthShaper. Use them to create modulation of the filter, pitch, distortion, noise level, panning or stereo width that follows the rhythm and dynamics of your audio. There is a separate Envelope Follower for each band.

To better understand the Envelope Follower, let's see how the Edit Panel controls (revealed by clicking the arrow button next to the Envelope power button) affect its response.

Envelope Controls

Attack

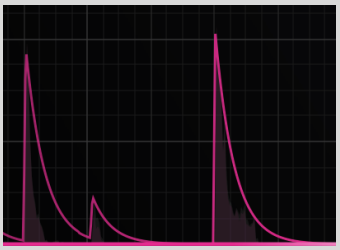
Attack determines how quickly the Envelope rises to meet peaks in the audio. A fast attack gives a practically instant rise, shown as a vertical line on the trace. A slow attack gives a gradual slope that lags a little behind the audio peak.



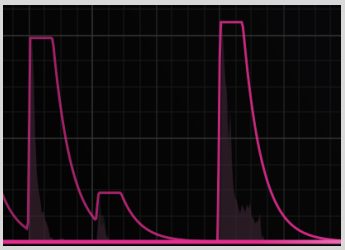
Fast attack **Slow attack**

Hold

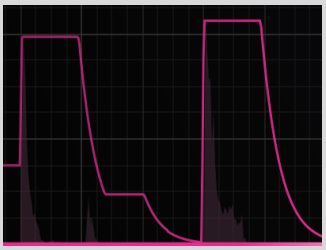
Once the Envelope has completed its attack phase and reached the peak level, you can make it stay at this level for a while, giving a flat horizontal line on the trace. Setting Hold to 0ms will disable this feature.



Hold disabled (0ms)



Short hold



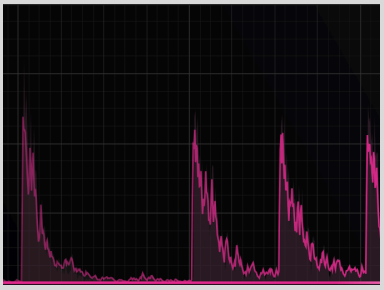
Long hold

Hold can be used to:

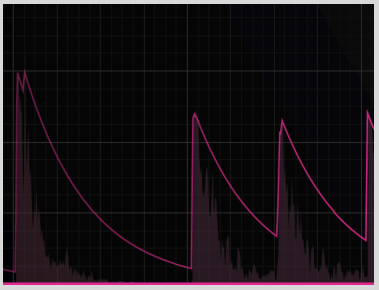
- Avoid distortion caused by very short attack and release times.
- Get musical, rhythmic results. Try setting hold to around 250ms at 120bpm to 'delay' the release by half a beat – good for creating off-beat bounce.

Release

What goes up must come down, and after the attack/hold phase, it's time for the Envelope to fall back to its resting point. The Release determines how long the descent takes. It looks something like this:



Fast release

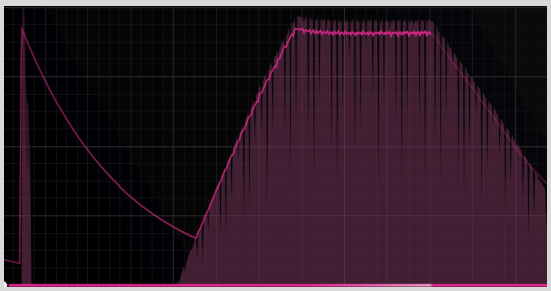


Slow release

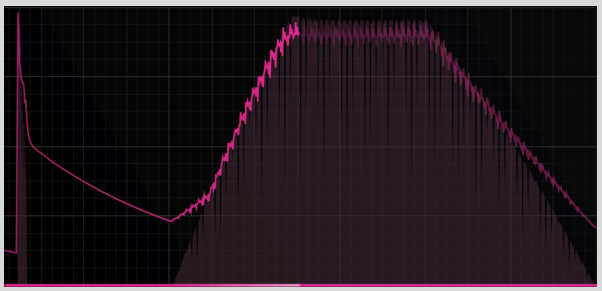
Very slow release

...Note how the fast release 'rides' individual cycles of the waveform.

Enable Adaptive Release with the small 'A' button next to the Release slider. This uses a dual-stage release envelope, so that quick transient events get a faster release time, thus reducing pumping artifacts.



Adaptive Release OFF

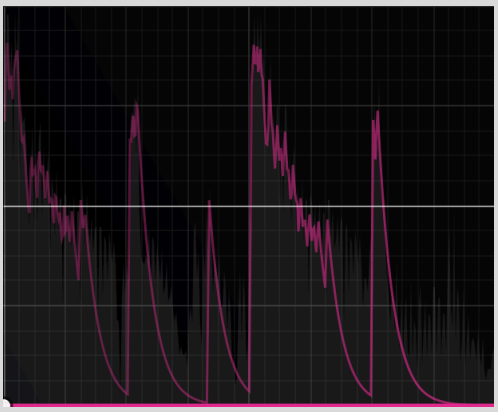


With Adaptive Release ON

Threshold

ShaperBox 3's Envelope Follower is extremely sensitive, and will accurately follow even the smallest details of your track. Sometimes, though, you only want the Envelope to react to the loudest, boldest sounds – for example, the kick and snare in a drum loop, but not the hi-hats. This is where the Threshold control comes in. It allows you to exclude quiet sounds from being tracked by the Envelope Follower. Set the Threshold, and the Envelope will 'ignore' all sounds below this level (you may also know this as a gate). To have the entire input 'followed', set the Threshold to the minimum value of -Inf dB.

Gate disabled (-inf. dB)



Gate at 50%

Amount

Perhaps the simplest control in the Envelope Follower, this sets the strength of modulation produced by the Envelope Follower, up to 200% (and beyond with the Depth control, explained below). Note that in Add mode (explained later), it can also be set negatively. For example, to make FilterShaper Core's low-pass filter 'open' with each kick drum hit, you would use a positive Amount to raise the cutoff with every hit. To make the filter 'close' with every hit, you would use a negative Amount instead.

Shift

Sometimes, the Envelope is reacting exactly how you like, but you want to shift the whole modulation curve up or down on the graph. This control does just that. As an example, let's

say you're modulating FilterShaper Core's low-pass filter cutoff on a synth lead, and you want just a bit of filter movement – about 10% Amount seems right. However, at default levels, the filter cutoff will hardly reach above 100Hz, so the high-pitched synth lead becomes inaudible! Increasing Amount helps, but then the cutoff is rushing up and down the whole frequency range, creating a very obvious effect. Raising Shift instead allows you to position the modulation's resting point without changing the Amount.

💡 TIP: If you want to get a Shaper's parameter moving using host DAW automation rather than the LFO or Envelope Follower, this is the parameter to do it with. Automating Shift with no LFO or envelope modulation (ie, Threshold all the way up or Amount all the way down) taking place simply manipulates the filter cutoff/resonance, pan position or stereo width directly.

Depth

Sometimes you need even stronger modulation than the default Amount range of +/-200% can supply. For example, when Attack is increased, the envelope may not rise up as far when reacting to transients. Or when using sidechain filtering (explained later), the input signal may be reduced in level due to frequencies being removed, so the envelope is also lower in level. The Depth buttons are there to help in such cases. Choose between x2, x4 and x8 options, representing +/-200%, +/-400%, and +/-800% Amount ranges.

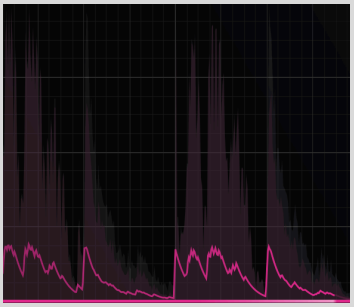
Add / Multiply

This option (in FilterShaper Core, PitchShaper, LiquidShaper, CrushShaper, DriveShaper, WidthShaper), controls how the Envelope and the LFO interact. While the Envelope and LFO can seem like two separate 'effects' in use, the modulation shapes they create are always combined before being used to control a single parameter such as filter cutoff.

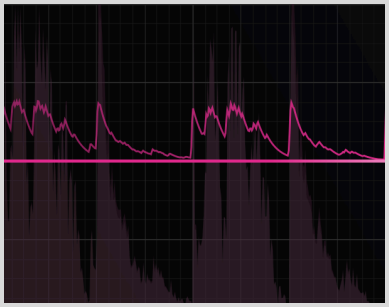
The colored Modulation Trace drawn on the graph reflects this, and although it may seem like this is showing you the Envelope's response, that's not quite accurate – it is the *combined* LFO/Envelope result.

So how does ShaperBox 3 combine the LFO and Envelope? The simplest way is to add them together – that's the default Add mode.

Here are a few examples of how the LFO and Envelope will stack up when added – the Envelope is using the exact same settings in all examples:

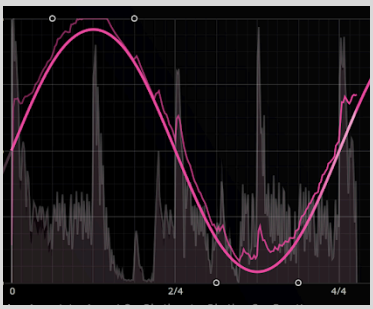


LFO at 0% position

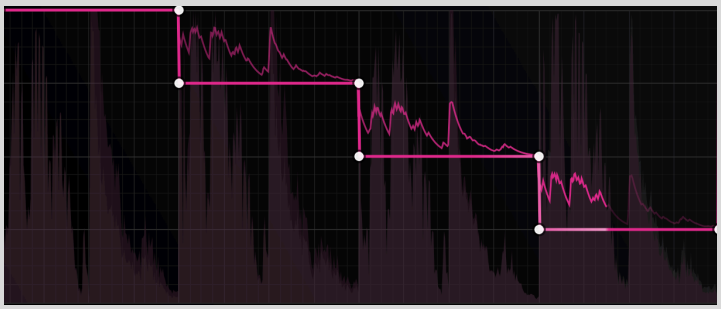


LFO at 50% position

Rising LFO ramp



LFO sine wave



LFO steps

In Add mode, you can think of the LFO as applying an offset to the Envelope's vertical position (or vice versa).

💡 TIP: If the total modulation amount (LFO + Envelope) exceeds the top of the graph, it will have nowhere left to go. You can see this in the sine wave and steps examples above: where the LFO reaches the maximum position, the envelope trace is flattened out. Therefore, it is possible to create a setup that gives no modulation, if the LFO is in the 100% position all of the time. The same advice applies with negative Amounts and the bottom of the graph.

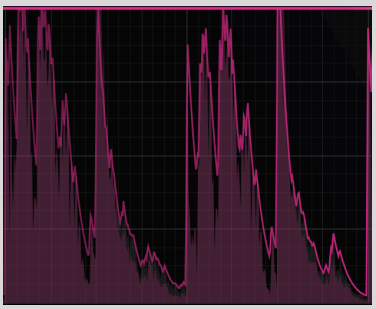
Multiply mode

In Multiply mode, the LFO and Envelope are instead multiplied together. Essentially, the LFO controls the depth/strength/amount of the Envelope's modulation. You could create a cool filter cutoff Envelope that reacts to the hi-hats, and make it more intense over time with a simple rising LFO ramp across a number of bars.

💡 TIP: When the Envelope is reacting quickly (eg, reacting to every 1/4 note), and the LFO more slowly (eg, 2 bars), it can seem like the slower element, the LFO, is controlling the intensity of the faster element, the Envelope. However, with a slow Envelope and rapid LFO modulation, the perceived effect is reversed: it seems like the Envelope is controlling the intensity of the LFO.

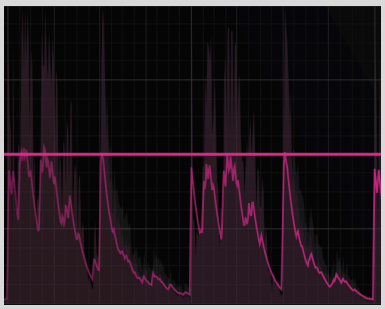
💡 TIP: Multiply mode has one important consequence that you need to bear in mind: if the LFO *or* envelope is at zero (at the bottom of the graph), then the output will also be zero. That means no modulation! So, if you are using Multiply mode, and no modulation is happening, make sure your LFO and envelope are both well above zero. This is especially important with low-pass filters in FilterShaper Core, because they can produce silence if stuck at their lowest position (20Hz).

Here are some examples of Multiply mode in action:



LFO at 100%

Full envelope modulation is visible

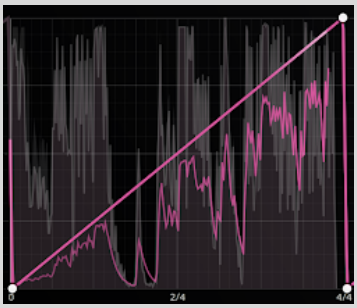


LFO at 50%

Envelope modulation is reduced to half the height

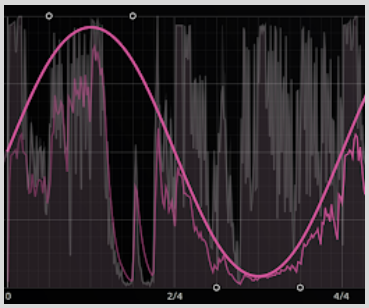
LFO at 0%

With LFO at zero, there is no modulation!



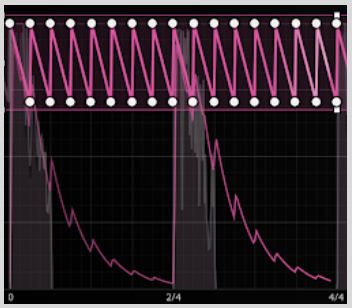
LFO ramp wave

The amount of envelope modulation increases over time



LFO sine wave

The amount of envelope modulation undulates up and down over time



Slow Release Env. with Fast LFO

The fast LFO pattern is controlled by the slower envelope. Every time there is a loud drum hit, the pattern becomes more pronounced.

Follow / Duck

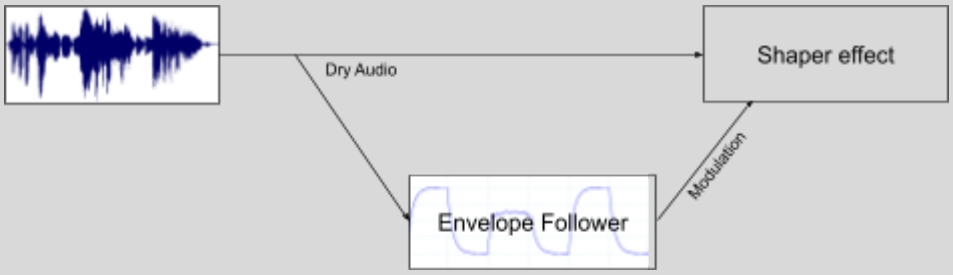
Found only in NoiseShaper and ReverbShaper, this option determines whether the noise is heard during the presence (**Follow**) or absence (**Duck**) of an input signal.

In Follow mode, the noise level or reverb tail tracks the dynamic contour of the input signal, rising and falling in tandem with it. This is the mode to opt for when you want to add a noise layer directly to an existing sound.

With the Envelope Follower set to Duck mode, the noise or reverb tail is ducked (attenuated) whenever a signal is present at the input, rising up again to 'fill the gaps' as the input signal drops in volume. The **Threshold** slider determines the volume level that the input has to reach to initiate the ducking, while the **Level** slider controls the amount of ducking applied.

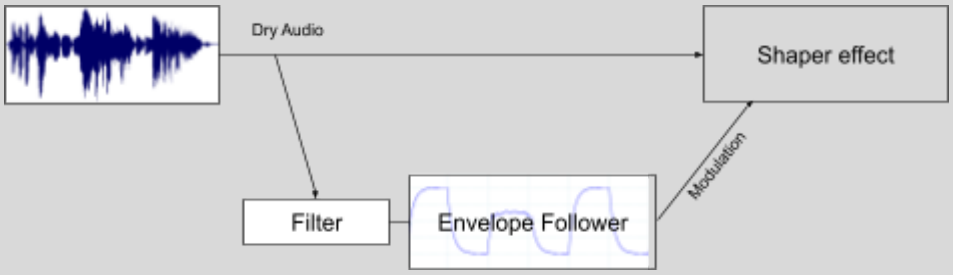
Input

Normally, the Envelope Follower listens and reacts to all frequencies in the input signal (or in the current band, as defined in the upper-left Bands section).

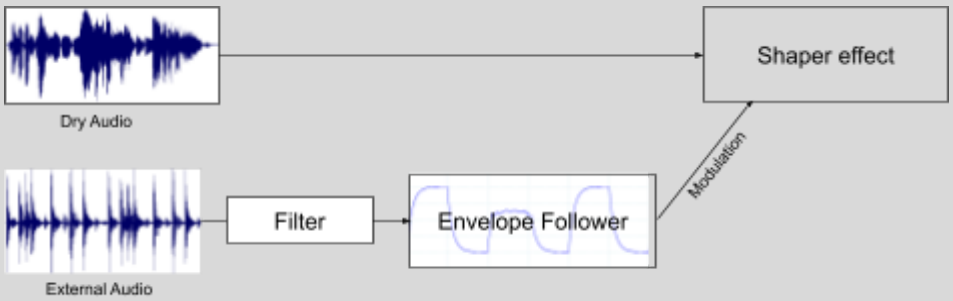


We can see that the Dry Audio signal is split in two, with one copy sent to the Shaper effect (eg, filter, pitch, distortion, noise, panner, widener) for processing, and an identical copy sent to the Envelope Follower's input.

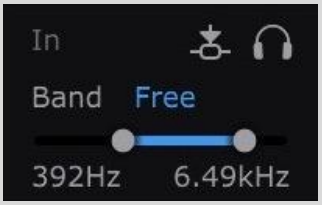
But it doesn't have to be this way: the Filter section allows you to select which frequencies the Envelope hears (Note: this does not filter the audio you hear, and it has nothing to do with FilterShaper Core 's creative filtering effects). Like this:



You can even route in external signals from other tracks in your project (called external sidechain routing), like this:



Envelope filter and sidechain



- **Band/Free**: In Band mode, the Envelope Follower responds to the frequencies in the band, as defined in the upper-left Bands section.

  In Free mode (shown), you can freely adjust the High/Low Envelope Filters independently of the band crossover frequencies.

- **High/Low Envelope Filters**: This double-ended slider sets the range of frequencies this Envelope Follower will hear and respond to. The exact frequencies are displayed in the help text area at the bottom of the plugin.

- When in Band mode, you cannot edit this parameter, though it will reflect your current Bands setting – a useful reminder of how the Band mode works.

  Here are some example uses for the Envelope Follower's Free mode:

  - Widen the high frequencies of a mixed loop whenever the kick drum plays.
  - Momentarily open the filter cutoff only when the snare drum plays, to automatically extract/isolate the snare drums in a mixed loop.
  - Slightly pan a guitar or synth part in response to the midrange frequencies of a vocal (using Sidechain – see below), creating subtle mix space for the vocal, and dynamic stereo placement.

- **Sidechain**: Enable this and the Envelope Follower listens to an external sidechain signal, which could be any track in your DAW. For this to work, you must use your DAW to route the sidechain signal into ShaperBox 3's secondary inputs (ie, inputs 3 and 4). Please see the ShaperBox 3 FAQ for information on this.

  Using external sidechain routing, you can, for example, compress the bassline on one track whenever the kick drum on another track plays.

  Note that you can use the Envelope Follower's Filter section and Sidechain at the same time to achieve advanced and creative routings.

  When the Sidechain is active, moving the mouse pointer over the **Threshold** control or Envelope Filter/Sidechain section will switch the Oscilloscope to showing the sidechain input (including any filtering) instead of the regular input/output.

- **Solo Sidechain**: Lets you hear exactly what the Envelope Follower is hearing – especially useful when using the Free Filter or Sidechain options. The filtered signal is routed directly to ShaperBox 3's output, bypassing all other Shapers, so that you can monitor it in isolation.

Tools

Tools are ancillary signal processors and other non-LFO-driven 'devices' intended for use in conjunction with Shapers. They can be inserted anywhere you like in the Shaper chain, and their interfaces appear in the main panel below when they're selected.

Compressor

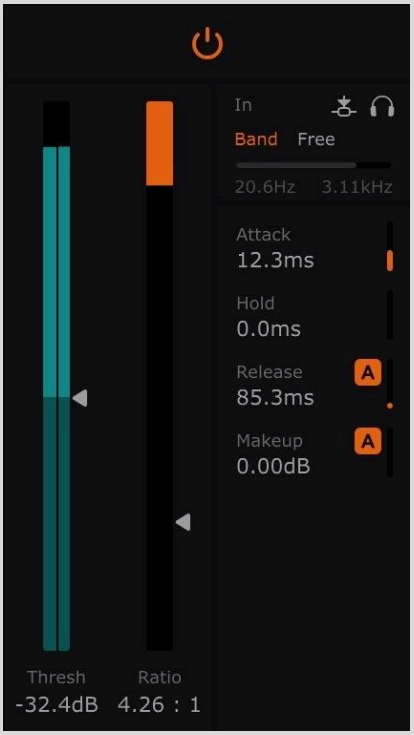
ShaperBox's Compressor is great for automatic smoothing of dynamically uneven signals, getting them sounding thicker and more present. Use it to make drums more punchy and 'glued', basses chunkier, vocals more in-your-face, and synths more 'pumping'.

A compressor reduces the volume of the input signal by a certain amount (Ratio) whenever it goes above a user-specified level (Threshold), then returns it to its original volume again when it drops back below the same level (Threshold). The reduction and subsequent return occur at user-specified rates (Attack, Hold, Release).

To better understand the Compressor, let's see how the controls affect it.

💡 TIP: If these controls seem familiar, that's because all of them apart from Ratio are also found in the Envelope Followers, where they're functionally identical.

Threshold



The Threshold control sets the decibel level above which the volume reduction (compression) is triggered. You might position it to 'catch' just the very loudest elements (the snare in a drum loop, say), or dig deeper into the signal to clamp down on all but the quietest bits (squashing an unruly bassline, for example). In simple terms, everything below the Threshold is ignored, and everything above it gets compressed.

Ratio

The amount of volume reduction (compression) applied to the signal when it exceeds the Threshold, expressed as a ratio between 1.00:1 and 100:1. With Ratio set to 5:1, for example, the output signal will only rise by 1dB for every 5dB the input signal exceeds the Threshold. 2:1 is the default value of the Compressor, and it's a good starting point for everyday compression, smoothing dynamics in a natural, non-obvious way; 100:1, on the other hand, delivers brutal limiting, bringing peaks almost all the way down to the level of the quietest elements. A 1:1 ratio means no compression takes place.

Attack

As we've explained, when the input signal exceeds the Threshold, compression kicks in – but that doesn't happen instantly (although it can be very fast indeed). The speed at which the full compression Ratio – and thus full volume reduction – is reached is set by the Attack slider, which ranges from 0.010-200ms. At very low Attack settings, peaks in the signal are compressed so fast that even the initial transients (the very first, 'attacking' part of a sound) don't get through. Lengthening the Attack, then, allows the crack of a snare drum or the 'pluck' of an electric bass to get through, before the 'body' of the sound is reduced in level. This enhances the impression of snap (short attack) and punch (long attack). Lengthen it too far, though, and the compression might not have time to grab hold of fast transients – although this can be just the ticket if you're after a pumping effect on more sustained sounds.

Hold

Once the Attack phase has completed and full compression is reached, the Hold setting keeps it at that level for up to 500ms, regardless of input signal level. Setting Hold to 0ms will disable this feature.

💡 TIP: Use Hold to create more specific compression shapes. For example, with fast Attack/Release compression on drums, try setting Hold to 5ms to emphasize the transients even more.

💡 TIP: The Compressor is designed to give low distortion. However, with very fast attack/release times, distortion may naturally occur as the compressor 'rides' individual wave cycles of the sound. Short Hold setting can alleviate this. Try compressing a clean but deep bassline (a sine wave sub bass or 808 is perfect) to explore this.

Release

When the input signal falls back below the Threshold, the Release parameter determines how long it takes for the compression to 'let go', returning the signal to its natural volume level, from 50.0ms to 2.00s.

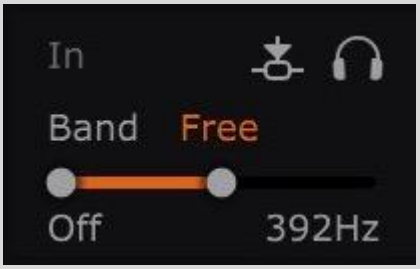
Enable Adaptive Release with the small A button next to the Release slider. This uses a dual-stage release envelope, so that quick transient events get a faster release time, reducing pumping artifacts.

Makeup

A compressor lowers the volume of the signal when it goes above the threshold, meaning the output will always be quieter than its input. To counteract this, most compressors have something called makeup gain to boost the signal afterwards – and ShaperBox's is no exception. With the 'A' button on, Auto Makeup is active, which automatically sets the output gain so that, in most cases, the compressed signal sounds about as loud as the original, dry one – important for making accurate comparisons and managing gain-staging. If the Auto Makeup doesn't get it quite right, you can manually offset it using the Makeup slider.

Input

The Compressor uses an 'internal' envelope follower (a.k.a. detection circuit) to track the volume level of a 'silent' parallel copy of the input signal, and this envelope follower has all the same features as the ones found in the Shapers. So, you can filter what the Compressor responds to, or override it with the audio from another track altogether via the External Sidechain input.



Detection circuit filter and sidechain

- **Band/Free**: In Band mode, the detection circuit responds to the frequencies in the band, as defined in the upper-left Bands section.

In Free mode, you can freely adjust the High/Low Envelope Filters independently of the band crossover frequencies.

Here are some example uses for the Compressor's Free mode:

- Making the compressor 'ignore' the bass so as to avoid it causing unwanted pumping.
- De-essing. Focus the Filters on the sibilant frequencies in a vocal, or the 'harshness' range of a cymbal, for example. Adjust Bands to separately choose the frequencies that actually get reduced, for transparent results.
- Mix rescue at the mastering stage. Imagine a drum loop with kick drum, snare drum and hi hats. The snare drum is standing out of the mix too much, so you would like to add compression to the whole mix whenever there is a snare drum hit. By setting the Envelope section's filters to focus on the 200Hz region where the snare's fundamental tone is found, the compressor's detection circuit will ignore the bass drum and hi-hats.

- **High/Low Filters**: This double-ended slider sets the range of frequencies the Compressor will hear and respond to. When in Band mode, you cannot edit this parameter, though it will reflect your current Bands setting – a useful reminder of how the Band mode works.

- **Sidechain**: Enable this and the Compressor listens to an external sidechain signal, which could be any track in your DAW. For this to work, you must use your DAW to route the sidechain signal into ShaperBox 3's secondary inputs (ie, inputs 3 & 4). Please see your DAW's manual for information on this.

  Note that you can use the Compressor's Filter section and Sidechain at the same time to achieve advanced and creative routings.

  Using external sidechain routing, you can, for example, compress the bassline on one track whenever the kick drum on another track plays.

  When the Sidechain is active, moving the mouse pointer over the **Threshold** control or Detection Circuit/Sidechain Filter section will switch the Oscilloscope to showing the sidechain input (including any filtering) instead of the regular input/output.

- **Solo Sidechain**: Lets you hear exactly what the Compressor is hearing – especially useful when using the Free Filter or Sidechain options. The filtered signal is routed directly to ShaperBox 3's output, bypassing all other Shapers, so you can monitor it in isolation.

Multiband editor

The Compressor features the same Multiband Editor as the Shapers, enabling up to three independent bands of compression to be set up in a single instance. Please see the **Multiband Editor** section for details.

Oscilloscope

The Oscilloscope breaks the integrated sample-accurate Shaper Oscilloscope out into a separate Tool for placement anywhere in the signal path as a second stage of visual analysis after the preceding Shaper (set to a different loop length or channel mode, perhaps), or usage on its own.

Length and Trigger Mode

The Oscilloscope Tool can be set to display any given time range, and triggered in sync with the host DAW, or via MIDI or Audio input – see the main **LFO Settings** section for details.

💡 TIP: In Pitch mode, the display range changes with the pitch of incoming MIDI notes, enabling easy analysis of synth waveforms. Use the **Transpose** (+/-3 Octaves) control to 'zoom' horizontally in and out of the waveform.

Zoom

Scale the oscilloscope vertically to expand the waveforms of quiet signals, or reduce the waveforms of overly loud signals.

Mode

Switch the display between showing the waveform of the **Left** or **Right** channel alone, **Both** channels overlaid, or shown separately with the **Split** mode.

Show SC

Overlay the waveform of the external sidechain input on the waveform of the main input signal. Use this to see the precise positioning of both signals together.

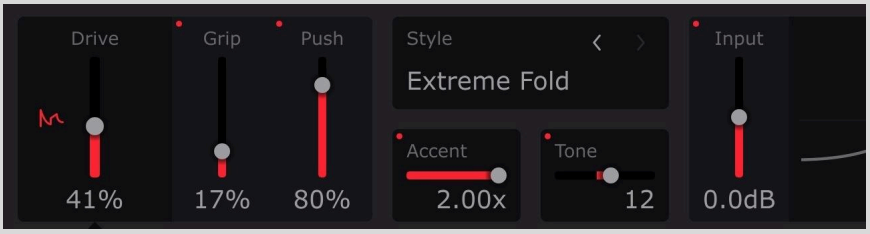
Freeze

Pause the waveform in its current state. Click again to resume real-time analysis.

Clipping indicators

Whenever the input waveform exceeds 0dB, red pixels appear at the top or bottom of the oscilloscope, indicating the potential for clipping. Note that Oscilloscope does not clip or process the audio in any way: it's just a visual indicator to help you avoid clipping or excessive limiting in your productions. Clipping is not shown for the external sidechain waveform.

Automation Target Indicators



The complexity of ShaperBox 3's open-ended architecture means that not every parameter in the interface can be automated. In order to make it easy to see exactly what controls you *can* use with your DAW's automation system, though, we've implemented a key command combination that instantly reveals all possible targets in the currently visible Shaper. Simply press and hold **COMMAND-CTRL-OPTION** on Mac or **START-CTRL-ALT** on Windows to reveal a small coloured dot in the top left corner of every control that can be automated in your DAW for as long as the keys are held down. Note that these are only indicators, not any sort of activation system in themselves – you can always automate all viable parameters, regardless of whether or not you've invoked the indicator dots at any point.

💡 TIP: Pro Tools users might recognise this particular key combination as the same one used to open Pro Tools' Plug-In Automation menu when clicking on a control. That function still works as normal, of course, but with the target indicators making it even easier and more intuitive to work with.

Latency and lookahead

'Lookahead' lets a plugin see ahead in time to process audio slightly before it's actually heard. In reality, the signal is briefly delayed inside a buffer, giving the plugin time to analyse the input and prepare the output. This allows certain features or audio improvements, and the added delay is called 'latency'.

In ShaperBox 3, latency is introduced by certain Shapers and features:

Audio Trigger: Adds **14ms** latency when one or more Shapers are using Audio Trigger mode. Note that this rises to **24ms** latency if using the 'Complex' algorithm.

VolumeShaper: Adds **6ms** latency when Anti-Click Trigger Smoothing is enabled in the Main Menu and VolumeShaper is in Audio or MIDI Trigger mode.

PitchShaper: Adds **35ms** in Complex mode, **50ms** in Vocals mode, and **60ms** in Drums mode, to maintain transient accuracy and stable shifting. Vintage mode adds no latency.

DriveShaper: Adds **0.36ms** latency for oversampling, to reduce aliasing. If Reserve DriveShaper Latency is enabled in the Main Menu, this latency is always applied, so that Drive can be bypassed without causing clicks.

As mentioned, this buffering process means the output is slightly delayed compared to the input.

However, your DAW automatically corrects for this using Plugin Delay Compensation (PDC) – delaying all other tracks by the same amount so everything stays perfectly in sync.

You won't hear the latency directly, then, but plugins in a chain add up to increase the overall project latency. If total latency becomes high, you might notice lag when playing virtual instruments, monitoring live, adjusting controls, and starting/stopping playback.

Some DAWs offer ways to alleviate this for recording purposes – for example, Ableton Live's Reduced Latency When Monitoring or Cubase's Constrain Delay Compensation. This can be useful when you need to, say, record into a busy project.