![cableguys logo]

ShaperBox 2

Manual

v2.4.4

Contents

Welcome to ShaperBox 2

Cableguys ShaperBox 2 is a flexible effects rack for precision mixing and creative sound design. It contains eight powerful effects called Shapers, which are processed in series, meaning the output of each one feeds into the next, creating an effects chain. The Shapers can be placed in any order you like to create a wide range of effects, and each is calculated on a per-sample basis, for high quality results.

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 and a Compressor 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
32- or 64-bit

Mac
Intel or M1 (Native/Rosetta) processor
Mac OS X 10.9 or later
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.

Installation & Licensing

Please refer to the online Cableguys Installation Instructions.

What's New in ShaperBox 2

ShaperBox 2 is regularly updated with new features and improvements. New Shapers are also added semi-regularly, sometimes as paid upgrades.

Below is an overview of the key changes up to v2.4.4.

To ensure that you are running the latest version, download it from your Cableguys account.

v2.4.4 – December 2021
- **VST 3 version** for Windows and Mac.
- **OpenGL Graphics** option for Windows.

v2.4.3 – November 2021
- **12 new noises** for NoiseShaper.

v2.4.2 – October 2021
- **Show User Noise Folder** for easier user noise import.

v2.4 – October 2021
- **New: NoiseShaper**, the dynamic noise designer.
- **Native Apple Silicon** compatibility.

v2.3.2 – May 2021
- **AAX version**, for compatibility with Pro Tools.

v2.3 – December 2020
- **New: DriveShaper**, the ultimate distortion toolkit.
- **LFO Smooth** control for all Shapers (except TimeShaper).

v2.2 – November 2020
- **Stereo Offset** control for FilterShaper Core 2,
- **Easy 1-slider Envelope/Compressor** editing.
- **Waveform editing enhancements**.
- **Custom startup preset**.
- **2x Lower CPU** in TimeShaper.

v2.1 – December 2019
- **New: CrushShaper**, the ultimate creative bitcrusher.

V2.0 – September 2019
- **Pens** for drawing crisp lines, smooth arcs and flowing S-curves.
- **Envelope Followers** that react to audio dynamics.
- **British-inspired Compressor** inside VolumeShaper 6.
- **Phasers and multiband** added to FilterShaper Core 2.
- **Fine Mode** in TimeShaper 2.
- **Haas stereo panning** in PanShaper 3.
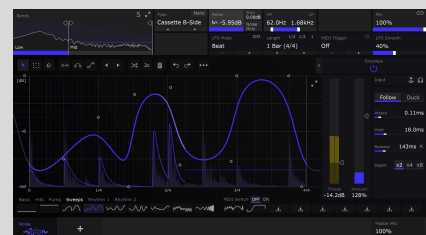
See the changelog.txt in the ShaperBox installer Zip for a complete list of changes.

Quick-Start Guide

1. Add a Shaper
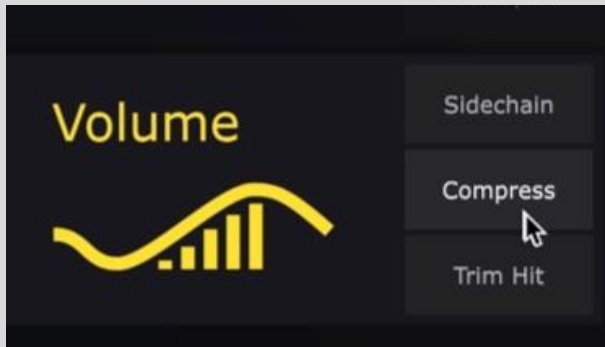
When you load ShaperBox 2, you see a screen that shows all eight available Shapers. Go ahead and click one to add it to the effects chain in its default state, or click one of the three Quick Presets next to any Shaper to instantly set it up in a useful configuration – a VolumeShaper 6 sidechain, or TimeShaper 2 'vinyl scratch', for example. Alternatively, click **Add all Shapers** to insert all eight Shapers in one go. 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
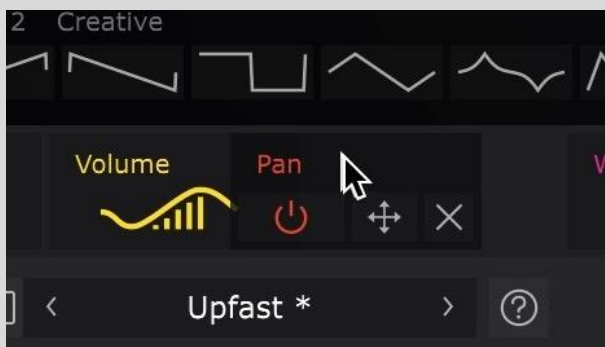
Do you want a filtered stutter or a stuttered filter? The order in which you place your Shapers can have a big impact on the sound – drag them left and right in the Shaper Bar to rearrange them. To bring up a Shaper for editing, click its icon. Hit '+' to bring up the Start Screen and add more Shapers (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 centre 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 brings 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 bottom of the plugin.

5. Set up the Envelope Follower

Filter, Drive, Crush, Noise, 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, 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 next to 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.

VolumeShaper 6 is a little different: it contains a Compressor section instead. However, the controls work in almost exactly the same way as those of the envelope follower (because a compressor is basically an envelope follower that controls amplitude).

6. Load Presets
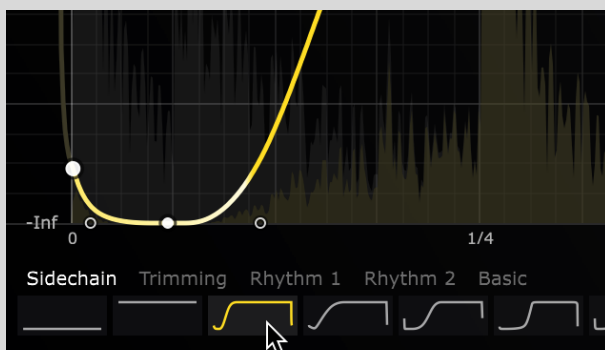
For instant inspiration, use the User Wave buttons below-left to call up specially designed LFO Wave Presets. These cover everything from classic sine, square, saw and other

analogue-style waveforms, to production essentials like sidechain ducking, and a variety of creative rhythmic patterns. Or use the preset bar at the very bottom of the interface to load professionally crafted ShaperBox 2 presets – step through presets with the < and > buttons to either side of the current preset name, and open the full browser with the 'folder' icon.

7. 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 Wave. Use the upper-right Mix slider to blend dry and wet signals for every band, or the lower-right Master Mix to blend ShaperBox 2's final output with the dry input signal.

Need more help?

Hover the mouse over any control to see a quick description in the lower-right Help bar. Click the '?' icon at the bottom 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 Design Your Own LFOs in just 10 minutes.**

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

▶ **Learn how to Make Your Music Move With Filters using FilterShaper Core 2.**

▶ **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. In addition, Drive, Crush, Filter, Noise, Pan and Width Shapers can be modulated using an Envelope Follower, while VolumeShaper features a corresponding Compressor section.

Shaper Parameters

As mentioned, every Shaper offers one or more modulatable Shaper Parameters – for example, FilterShaper Core 2 gives you Cutoff and Resonance.

There are three ways to control a Shaper Parameter: by dragging its control tile up/down, via the LFO, or with the Envelope Follower. All 3 methods can be used simultaneously.

Dragging the control tile up/down actually moves the entire LFO up/down. The percentage 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. 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 the symbol on its control tile, 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 tile 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 2

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.
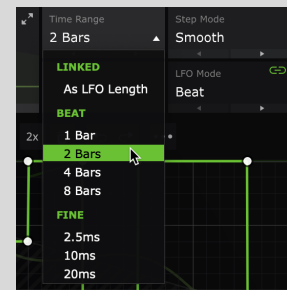

Use TimeShaper for...

- [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 User 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 (labelled at the bottom of the axis) depends on the Time Range option – see the TimeShaper Settings section, below, for more on this.
- **X axis offset indicator bar:** The right edge moves steadily and points to the current position in the *LFO*. The left edge shows the point in the input *audio* waveform that's actually being played back.

DriveShaper

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**: Visualises 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 visualised 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.
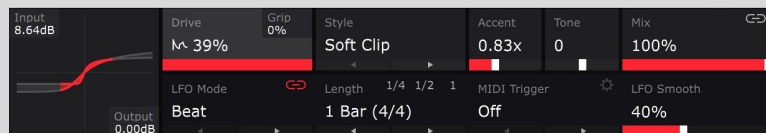
- **⊠Drive**: DriveShaper's main control, boosting the gain of the signal going into the saturation circuit to increasingly distort it, with gain compensation automatically applied to balance the output level. The precise effect of increasing the Drive depends on the currently selected Style. The Distortion Transfer Curve visualises 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**: Modifies 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**: Applies 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:** Ten 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.
  - **Hard Clip:** Hard saturation of the kind produced by guitar fuzzbox effects.
  - **Soft Square**: Adds smooth distortion around the zero crossing line, and gradually squashes the distortion curve towards a rectangular shaper.
  - **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 colourful 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
  - **Extreme Fold**: Non-linear transfer curve based on a three-stage analogue wave folding design.
- **Accent**: Emphasises or de-emphasises peaks in LFO/Envelope modulation by scaling the gain compensation. Useful for making modulated distortion patterns punch harder, or sitting them 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

NoiseShaper adds a layer of noise to any sound source – think of it as a noise oscillator for any audio signal. The LFO and Envelope Follower modulate the volume level of a wide variety of synthetic, organic and analogue sampled noises, with 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 – samples, synths, drums and more.
- Generating vinyl crackle, tape/cassette hiss, analogue noise and ambience beds that pump and breathe with your 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 patterns.
- 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: NoiseShaper is designed for use primarily with the Envelope Follower, which is open and active by default. (The LFO still has its uses, of course.)

Settings

- **Type:** Select any of over 60 diverse noises, organised into **Noise**, **Organic** and **Analogue** categories. Noises are downloaded to your computer the first time you launch ShaperBox 2, and you can select them directly from the menu, or step through them using the arrow buttons.
- **Mono**: Every NoiseShaper noise is stereo by default – click the Mono button to switch to mono. This simply mutes the
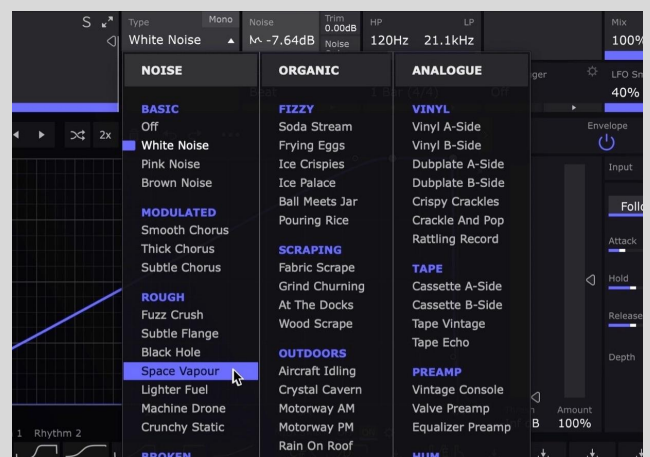
right channel and pans the left channel to centre, negating the phase issues that would occur with both channels summed and centred.

- ⋈ **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.
- **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.
- **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.

    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 2 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 2 User Noises** folder to categorise your noises. Note that only one tier of subfolders within **ShaperBox 2 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 or AIFF format in the **ShaperBox 2 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 1000.
⚠ 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.

FilterShaper Core 2

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**
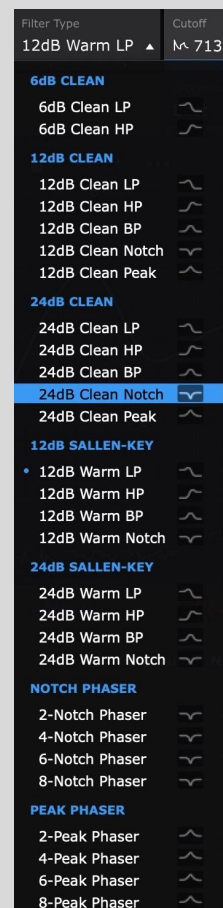
and musical movement to your music with FilterShaper Core 2.

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 incoming signal or another track entirely
- Complex 'wah'-style effects with an envelope follower on every band
- Radical multiband sound design with audio-rate modulation

Settings

- **Filter Type**
    - **6dB Clean (Low-Pass/High-Pass):** Ultra-transparent filters with a shallow slope for gentle high- and low-frequency roll-off.
    - **12dB Clean (Low-Pass/High-Pass/Band-Pass/Notch/Peak):** Standard steepness filters, for controlled yet characterful results.
    - **24dB Clean (Low-Pass/High-Pass/Band-Pass/Notch/Peak):** Like the 12dB Clean variants, but with sharper roll-off, for tight and flavourful frequency sculpting.
    - **12dB Sallen-Key (Low-Pass/High-Pass/Band-Pass/Notch):** Warm, analogue-style filters with a medium roll-off slope. Sallen-Key is a classic filter design found in several vintage and modern hardware analogue synths.
    - **24dB Sallen-Key (Low-Pass/High-Pass/Band-Pass/Notch):** Steeper analogue-style types for edgy 'character' filtering.
    - **Notch Phaser (2/4/6/8-Notch):** Creates multiple notches in the frequency spectrum. It's great for adding more subtle movement, and it works especially well on full-frequency material such as lush pads.
    - **Peak Phaser (2/4/6/8-Peak)**: Adds spaced resonant peaks. It excels at psychedelic sweeps and deep, powerful modulations that jump from the speakers.
- **Cutoff:** Controls the filter cutoff frequency, from 20.6Hz to 21.1kHz.
- **Resonance:** Controls the filter resonance, emphasising frequencies around the cutoff.
- **Stereo:** Raises/lowers 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 Phaser, Notch, Peak and BP Filter Types.

💡 TIP: Don't be afraid to push FilterShaper Core 2 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 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!

CrushShaper

CrushShaper is a digital distortion effect that enables independent modulation of wave wrapping overdrive, bit depth, sample rate and FX mix (applied in that order), using a dedicated LFO and Envelope Follower for each.

Use CrushShaper for

- Rhythmic distortion, turning even the plainest loops into track-starting grooves
- 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

- ⋏ **Crunch:** Applies wave wrapping distortion to mimic the 'overflow' of primitive digital audio systems. Wave wrapping sees the waveform 'wrapped' back round to the bottom of the waveform 'graph' (analogous to flying your ship off the sides of the screen in a game of Asteroids!) when it exceeds the 0dBFS threshold, yielding a much more jagged, jumpy waveshape than regular clipping or wave folding. Raising the Crunch parameter (manually or via modulation) overdrives the signal, pushing it increasingly hard into the 0dB threshold, from Off at the bottom of the Y axis to +27dB at the top.

- **Push:** The Crunch section's Push control shifts the thresholds for the top and bottom halves of the waveform for asymmetrical distortion, by applying DC offset before distortion. This DC offset is then removed after distortion.

- ⩗**Bits:** Applies 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:** Reduces quantisation distortion and gives greater dynamic range and preservation of the original signal, at the expense of added background noise.
- ⩗**Resample:** Controls 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.
- **Filter:** Reduces aliasing caused by the resampling process, applying a low-pass pre-filter at around half the Resample value (ie, the virtual Nyquist frequency).
- ⩗**FX Mix:** Blend the processed ('wet') signal with the dry signal. The main Mix parameter does exactly the same thing, but FX Mix can be modulated, enabling creative animation of the dry/wet blend prior to setting an overall balance with Mix.
- **LP:** Applies a low-pass filter at the output, for controlling high-end harshness in the mix, or simply achieving soft, lo-fi effects. In technical terms, this is analogous to the reconstruction filter used in digital-to-analogue conversion, used to avoid so-called imaging artifacts.
- **Gain:** Compensate for the level changes introduced by the Crunch and Bits stages.

Note: By default, CrushShaper's Mid band is set to leave the low frequency range unprocessed, ensuring your bass stays fat and solid, and giving optimum results in terms of musicality and 'damage control'. Feel free to abuse this particular presumption, though, of course.

Note: LFO Link isn't available in CrushShaper.

VolumeShaper 6

VolumeShaper modulates the volume of the audio signal based on the LFO waveform drawn into the Shaper Graph and/or the action of its compressor.

Use VolumeShaper for...

- Classic sidechain pumping/ducking effects

- [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
- Enhancing punch and snap with compression
- Multiband compression, for focused dynamic response
- Precision control of dynamics through a combination of compression and LFO volume modulation
- 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 centre, 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).

PanShaper 3

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
- Energising 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
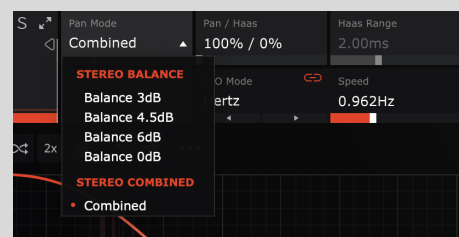
settings. The Y axis of the Wave Editor shows the left/right pan position and, if it's active, Haas delay time in milliseconds.

- **Pan Mode**
  - **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 to check 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.

WidthShaper 2

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.

Shaper Selection Screen
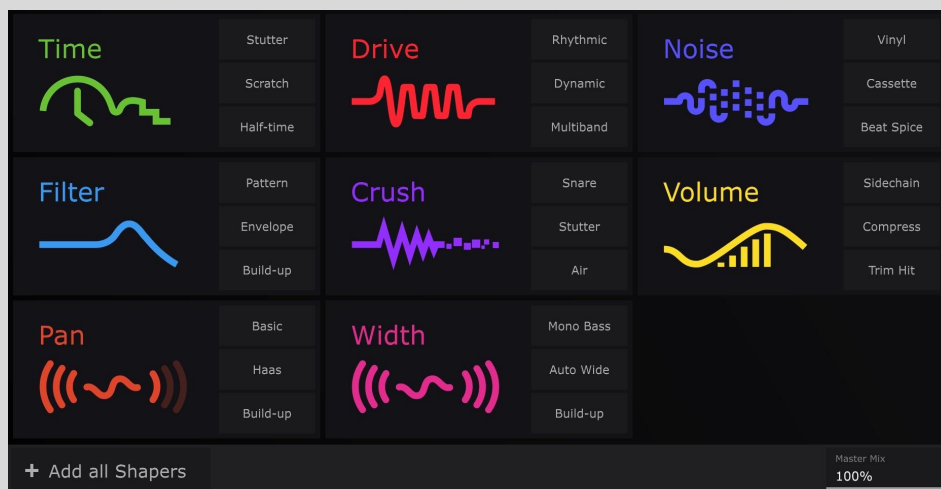
The first thing you see when you launch ShaperBox 2 is the Shaper Screen. Here, you can add any Shapers you own to the effects chain (or all of them at once with the **Add all Shapers** button), and try out any you don't in demo mode. If you prefer, you can hide Shapers you don't own with the 'Show Full Versions Only' button.

Each Shaper also has three Quick Presets underneath its main logo. These give you one-click access to a range of essential processes, such as sidechain ducking and compression with VolumeShaper 6, mono bass in WidthShaper 2, and half-time in TimeShaper 2.

If you would prefer ShaperBox 2 to always open up with one of these presets loaded, set your preferred startup preset in the Startup section of the Main (≡) menu.

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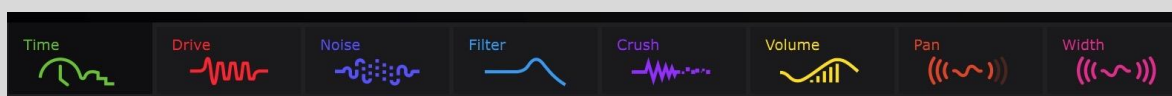
The Shaper Bar holds all currently loaded Shapers, with the signal flowing through them from left to right.

- 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.
- Use the Master Mix to blend the effected output with the unprocessed input. This can give different results to using the Mix controls inside individual Shapers, where the 'dry' signal is in fact the output of the previous Shaper in the signal path, rather than the unprocessed input, and the wet signal is the output of that Shaper within the chain, rather than the end of the chain as a whole.

The Help bar

At the bottom right of the GUI, ShaperBox's 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 its available settings where applicable.
- **Bands section**: The **Low** and **High Split** frequencies.
- **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.

Click the **?** icon at the left hand end of the Help bar to open the wave editing quick guide, which lists the point creation and modification options available in the wave editor.

Library Presets

ShaperBox 2 ships with a large library of professionally designed presets. It also gives access to the Cableguys Preset Cloud, where you can share presets with other users. Because Cableguys' in-house sound designers are constantly adding new presets to the Preset Cloud, the ShaperBox 2 library is ever-growing, bringing new presets to stimulate your creativity.

Loading a Preset always loads a complete ShaperBox setup, replacing all current Shapers and their settings. Presets include any User Waves too.

⇔: Step through presets based on your current Preset Filter setting.

📂: Open and close the full Preset Library Browser.

☰: Open the Main Menu.

Library Browser

Find both useful everyday setups and inspirational effects with ShaperBox 2's Library Browser.

💡 TIP: Presets are displayed in the order in which they were created, so to check out the newest presets, click ▸▸ to go to the end of the list.

From left to right, the elements of each Preset listing are:

- **Preset/Creator**: The name of the Preset and its Creator.
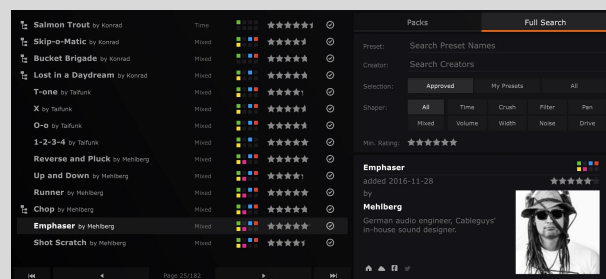
- **Shaper**: Indicates which Shaper this preset is for. Displays 'Mixed' if for multiple Shapers.
- **Shapers used:** Every Shaper used in the preset is represented by a square of its characteristic colour.
- **Rating**: How do other users rate this Preset? By default, this shows their average score. Click to set your own rating, shown in orange – click again to remove your rating.
- ⊘**Approved**: Cableguys' in-house sound designers check every Shared User Preset – if it's useful enough, it's Approved, as indicated by the 'tick' badge.
- ⬒**Shared/Private**: Make your preset Shared or Private – click the icon to toggle the status, updated on the next Sync. Note that once a Shared preset has been Synced, it cannot be set back to Private status.
- **Trash**: Delete a preset, updated on the next Sync. Note that Shared presets cannot be deleted once Synced.

Preset Filter

Fill in the fields to narrow the selection of presets.

- **Preset**: Partial matches are accepted – eg, type "rhythm" to see all presets containing the word rhythm.
- **Creator**: The author of the preset.
- **Selection**: Show only Approved presets, My Presets or All presets.
- **Shaper**: Sometimes, you want a preset for a specific Shaper – here's the option for that. Select Mixed to see Presets that combine multiple Shapers.
- **Minimum rating**: Only want the very best? Click to see the presets rated at least as high as your chosen star value.

Main Menu

- **Preset**
  - **New:** Want to start from scratch? This removes all Shapers and resets ShaperBox 2 to its default state.
  - **Save:** Store your preset – it will be stored locally, on your computer, until the next time you hit Sync. If you'd like to share the preset with others via the Cableguys Online Preset Library, uncheck 'Set to Private'.
  - **Startup**: Select one of the Quick Presets as your Startup preset, bypassing the Shaper Selection Screen. For example, choose the **VolumeShaper > Sidechain** option, and when you add a new ShaperBox, it loads up with a classic 1/4-note sidechain curve ready to go. Set to **ShaperBox > Empty (Default)** option to disable this feature.
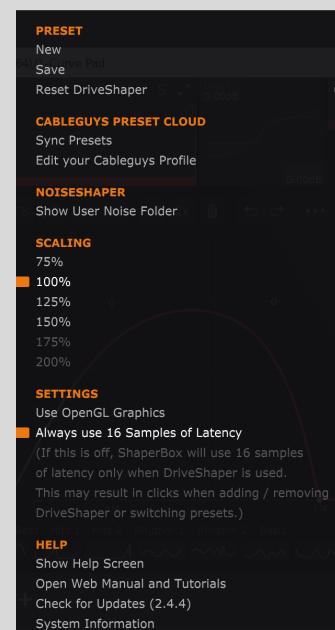
- ○ **Reset Shaper**: Revert the selected Shaper to its Init preset or any of its three Quick Presets.

- **Cableguys Preset Cloud**
  - ○ **Sync Presets:** Get up to date with all the latest presets. Selecting this menu option (or clicking the **Sync** button at the top right of the Preset Browser) will download all new Shared presets, and upload/update all of your presets (your Private ones are uploaded only for backup purposes – other users will not see them). Note that syncing is completely optional – you can use ShaperBox 2 without ever connecting it to the Internet.
  - ○ **Edit your Cableguys Profile:** Show the Cableguys community who you are! Upload your avatar image, enter profile text, and link to your website and social media. Profiles are completely optional and only available if you share presets. Any of the fields can be left blank.

- **NoiseShaper**
  - ○ **Show User Noise Folder:** Open NoiseShaper's user noise folder in Windows File Explorer/macOS Finder. Place WAV/AIF/AIFF 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.

- **Latency**
  - ○ **Always use 16 samples of latency**: When disabled, ShaperBox uses 0 samples of latency as long as DriveShaper is not loaded. Most DAWs compensate correctly for latency, so this setting has no practical effect. However, some DAWs (eg, 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 or vice versa, even though the audio is correctly processed.

- **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 greyed out.

- **Settings**
  - ○ **Use OpenGL Graphics** (Windows only): If you experience poor graphics performance (low frame rate, laggy control response or waveform point movement, etc), switching to OpenGL rendering may fix it. Due to a bug in some NVIDIA 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 ShaperBox 2.

- **Help**
  - ○ **Show Help Screen:** Open the quick wave editing guide.
  - ○ **Open Web Manual and Tutorials:** Access this manual.

- ○ **Check for Updates:** Ensure your ShaperBox 2 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 paste the System Information to your pasteboard.

Wave Presets
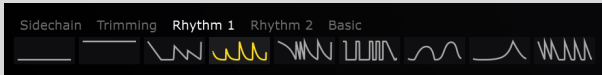
Each Shaper has its own specially designed Wave Presets. These are simpler than Library Presets, loading an LFO waveform into the current Shaper without changing any other settings.

Wave Presets are categorised. For example, VolumeShaper 6 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).

Wave Presets can be switched in real time using host automation.

💡 Study each Shaper's Wave Presets to learn which shapes create which effects – especially useful for TimeShaper 2.
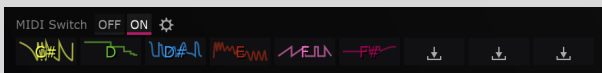
User Wave Slots

Opposite the fixed Wave Presets are nine User Wave Slots:
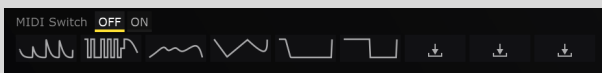
Click the 'downwards arrow' icon to Store the current Wave. Load any stored User Wave by clicking it. Hover on a stored User Wave for Store and Remove options.

When MIDI Switch is enabled, the User Wave Slots instead look like this:

Now MIDI notes C# to A will load the corresponding User Wave into the Shaper from which it was originally saved, turning ShaperBox 2 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 colour indicates both the Shaper and the band into which the Wave will be loaded. This makes it easy to load different Waves 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 – all the User Wave Slot assignments will be stored with it.

The cog icon opens a screen with MIDI input configuration and additional help – see *More on MIDI*, below.

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

- Switch FilterShaper Core patterns, from smooth sweeps, to fast wobbles and complex rhythms, to create a live 'wobble machine'.
- Store a range of TimeShaper stutter and repeat effects 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: Just like the Wave Presets, you can use host automation to switch User Waves.

💡 TIP: Why does the MIDI Switch key range start at C# and not C? The answer is that C is reserved for ShaperBox's 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.

Oscilloscope

A sample-accurate oscilloscope displays the input (dark) and processed (light) audio signals. By default, the Oscilloscope works in Magnitude mode, combining the left and right channels (showing whichever is highest in amplitude at any given moment) in a single 'upward' audio waveform.

You can switch to a normal waveform view, and left/right channels toggled in the Wave/Oscilloscope Menu (right-click in the waveform editor). You'll also find the option to Freeze the scope – useful if you'd like to continue editing while the transport is stopped.

Magnitude mode makes it easy to dial in VolumeShaper 6's Compressor and the Envelope Followers found in DriveShaper, CrushShaper, NoiseShaper, PanShaper 3, WidthShaper 2 and FilterShaper Core 2. For this reason, when the mouse pointer is over an Envelope Follower or Compressor control, Magnitude mode is always enabled temporarily, and the brightness of the waveforms is slightly increased.

LFO Wave Editor

ShaperBox 2 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.

▶ **Watch ["How To Design Your Own LFOs"](#) and learn how to use Cableguys' powerful LFO drawing and editing features in just 10 minutes.**

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 artifacts.

○ 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 of these.

Tool Strip

The Tool Strip contains tools used to create and edit waveforms in the Wave Editor. From left to right:

- **Pointer:** Create and edit points without snapping them to the background grid – see *How to edit points with the Pointer tool* below.
- **Selection:** Draw a box to select all points that fall within it, or **SHIFT**-click the button to select all points. You can then move and scale the points by dragging the selection box or the handles around its edges. Hold **ALT** to lock to vertical movement only, or **ALT-SHIFT** for horizontal lock. Hold **ALT** while scaling to stretch about the centre.
- **Snapped Pointer**: Works just like the Pointer, except points will be snapped to the background grid as you move them.
- **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.
- **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).
- **Randomize wave points**: All points are set to a new random position and weight. No points are removed or added, but points snap to the background grid if the Snapped Pointer is selected. **SHIFT**-click to move points vertically only, preserving the rhythm.
- **2x:** 'Double-time' the selection or the entire waveform. **SHIFT**-click to 'triple-time'.
- **Delete Points:** Remove all points, or delete selected points.
- **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 6 – just a little earlier or later can make a real difference to the groove and tightness.

How to edit points with the Pointer tool

- To create a soft point, **click** an empty area.
- To create a hard point, **CTRL-click** an empty area.
- To change a point's weight, **right-click** it.
- To delete a point, **double-click** it.
- To move a point, **drag** it.
- Toggle snapping temporarily by holding **SHIFT** while moving.
- Select multiple points with **SHIFT-drag**. 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** to lock to vertical movement only, or **ALT-CTRL** for horizontal lock. Hold **ALT** while stretching to scale about the centre. Hold **CTRL** while stretching to move the selected point independently, skewing the selection box, and hold **ALT-CTRL** to skew about the centre.

💡 TIP: Click the '?' icon to access a quick wave-editing guide right inside ShaperBox 2.

How to use Pens

ShaperBox 2'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.
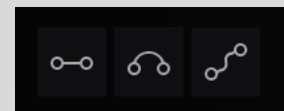
- **Click once** to add a line, arc or S-curve at the location shown by the white visual preview.
- **Click again** without moving the mouse to add the same shape again, right after the first. Repeat as required!
- **Click-drag** to change the length and height of the Pen shape. Note that if you drag 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.
- If a Pen shape 'crashes' into the edge of the Wave Editor, the shape will be compressed to fit. Clicking while the shape is compressed will set the Pen to this new size.
- **Hold CTRL** to toggle to the Pointer tool temporarily.
- **SHIFT-drag** to select multiple points. 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** to lock to vertical movement only, or **ALT-SHIFT** for horizontal lock. Hold **ALT** while stretching to scale about the centre.
- 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
Move points to grid
Flip horizontal
Flip vertical
Show triplet grid
Copy wave
Paste wave

OSCILLOSCOPE
Magnitude
Left channel
Right channel
Freeze

- **Wave**
  - **Select all points**: Creates a selection around all points in the Wave – the same as **SHIFT**-clicking the Selection tool button.
  - **Flip horizontal**: Reverse the wave/selection in time.
  - **Flip vertical**: Invert the wave/selection.
  - **Double**: 'Double-time' the selection or the entire wave.
  - **Triple**: 'Triple-time' the selection or the entire wave.
  - **Show triplet grid**: Change the snap grid to triplet time – useful for shuffle/swing rhythms.
  - **Copy/paste**: Transfer waves between Shapers and bands.

- **Oscilloscope**
  - **Magnitude mode**: The default 'half waveform' view, showing the highest amplitude at any given moment out of the left and right channels. Disable to switch to the classic two-channel mode.
  - **Left/Right channel**: Enable only one channel – useful for displaying a bigger mono waveform in classic oscilloscope mode. Disable both to turn off the oscilloscope.
  - **Freeze**: Lock the current waveform – useful if you want to edit while the transport is stopped.
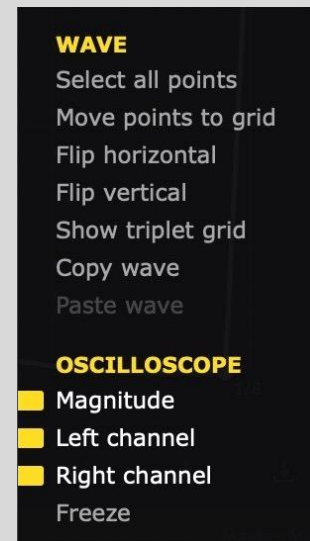
💡 TIP: Create a 'trimming' wave in VolumeShaper 6, so you hear only the hi-hats in a loop – then flip the wave vertically to exclude the hi-hats. This works great when applied only to the treble band.

💡 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 centre.

LFO Settings

LFO Mode	🔗	Length	1/4 1/2 1	MIDI Trigger	⚙
Beat		1 Bar (4/4)		Off	
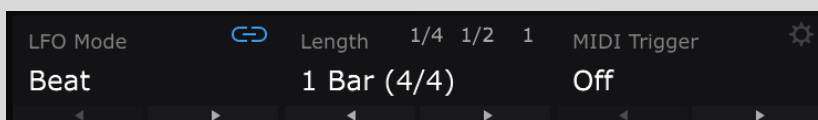
These three menus give you control over when the waveform starts over, and the length of the LFO cycle. You can set it free-running, synced to the tempo of your DAW, or even to the frequency (pitch) of a MIDI note you're playing, to create everything from long, evolving sweeps to freaky ring modulation-style 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.

Here's how the three menus work:

- **LFO Mode**
  - **Beat**: 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).
  - **Hertz**: The LFO rate is set in Hertz (cycles per second). When Hertz mode is selected, the LFO Length menu is replaced by a Speed slider. Note that in Hertz mode, the LFO is 'synced' to project position once when you hit play – this gives 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 MIDI Trigger menu switches automatically to On mode.

  - **LFO Link** : To set the LFO for multiple Shaper bands to the same settings, activate the Link icons in those bands. You can link any combination of the three bands in this way. When the Mid band is part of the linked group, you can automate all linked LFO controls via the Mid band's LFO parameters. If only Low and High are linked, then the Low band is the one to automate. Disable the Link controls for independent LFO settings per band. Note that Link affects Mode, Length/Speed and MIDI Trigger – to remind you, all three parameters will flash when toggling Link buttons.

- **Length/Speed**
  - **Length (1/128–32 Bars)**: In Beat 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 (0.020–5.24kHz)**: In Hertz mode, set the free-running LFO rate.

- **Smoothing:** 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. Note: TimeShaper does not feature the Smoothing slider, instead having a dedicated Step Mode option.

- **MIDI Trigger**
  - **Off**: The LFO loops continuously regardless of MIDI input.
  - **On**: The LFO loops continuously, but resets to the start when a MIDI note is received.
  - **On (1-Shot)**: The LFO does not loop, but will play exactly once when a MIDI note is received, then remain at the final value of the waveform. With VolumeShaper 6, for example, if the waveform ends at the bottom of the Graph, the volume will stay there, and you will hear only silence until the next MIDI note is received. Drag the final point/node of the waveform to the upper right of the graph to keep it at full volume after the LFO has played.

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 2, please visit our FAQ page.

Open ShaperBox 2's MIDI Setup screen by clicking the small 'cog' button in either the MIDI Switch or MIDI Trigger area.

- **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.
  - **Trigger Smoothing:** This option is on by default and alleviates the clicks that can arise when retriggering LFOs with 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 6's low band, leaving all other frequencies in the signal unaffected. Get tighter bass and keep the top-end groove.
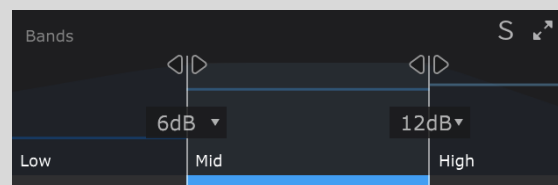
- **Multi-spectrum sidechaining:** Apply different sidechain ducking curves to each VolumeShaper 6 frequency range – go long on the bass, medium length in the mids, and short at the top, allowing your kick to punch through with total precision.
- **Get wide but solid bass:** Use WidthShaper 2 to widen the higher frequencies in a bassline while keeping the lows mono and centred.
- **Solve troublesome dynamics issues:** VolumeShaper 6's Compressor 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 3 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 2 with totally different LFO waveforms for each band.
- **Add interest to pads:** Apply FilterShaper Core 2'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 2'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 (S)**: Solo the selected band – the other bands in the Shaper are muted. Click between bands to instantly solo them.
- **'Arrows' button:** Expand the Bands spectrum to fill the interface.

Routing And Mixing
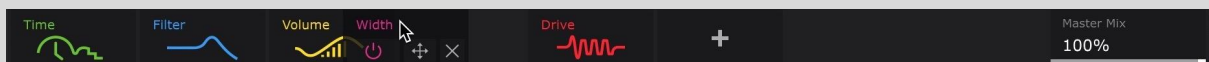
Do you want a filtered stutter or a stuttered filter? The order of the effects can make a huge difference to what you get out of them, and experimenting with this is very easy in ShaperBox 2 – just drag Shapers in the Shaper bar to change the left-to-right processing order.

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
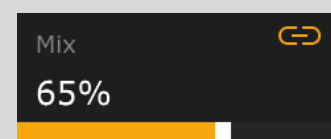
its output. In fact, there is a Mix control for each band when using Shapers in Multiband mode.

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 3'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 Filter and Time Shapers, blending the Dry and Wet signals has the potential for much more drastic effects.

To set the same dry/wet Mix amount for multiple Shaper bands, enable the Link button to the upper-right of the slider. You can link any combination of the three bands in this way. When the Mid band is part of the linked group, you can automate all linked Mix controls via the Mid Mix parameter. If only Low and High are linked, then the Low Mix parameter is the one to automate. Disable the Link controls for independent Dry/Wet Mix per band.

💡 TIP: As mentioned earlier, the Master Mix in the Shaper Bar works differently to the individual Mix sliders. Master Mix instead blends the output of the final Shaper in the chain with the unprocessed signal at the plugin's input. This is useful when, for example, you've put your signal through a far-too-destructive series of Shapers in the name of experimental sound design and want to rein the results back in by mixing in some of the original sound.

Envelope Follower (Drive / Filter / Crush / Pan / Width / Noise)

So far, we have only looked at ShaperBox 2'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. The grey spikes are drum hits in a loop, and the blue trace is the envelope follower's reaction to those hits. In this

example, FilterShaper Core 2's filter opens (ie, raises the filter cutoff) every time there is a loud drum hit, then closes gradually afterwards.

Envelope Followers are found in DriveShaper, FilterShaper Core 2, CrushShaper, NoiseShaper, PanShaper 3 and WidthShaper 2. Use them to create modulation of the filter, 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 – or just Envelope – let's see how the controls (in the Edit Panel, 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.
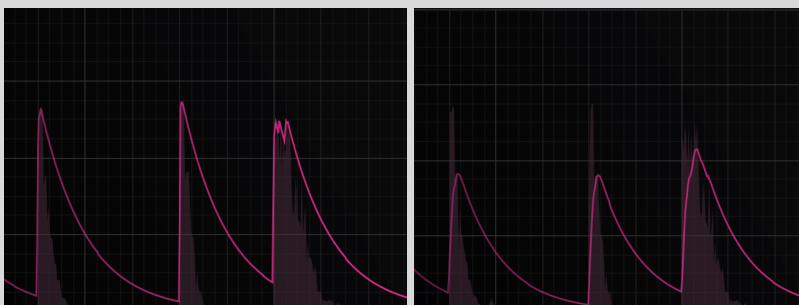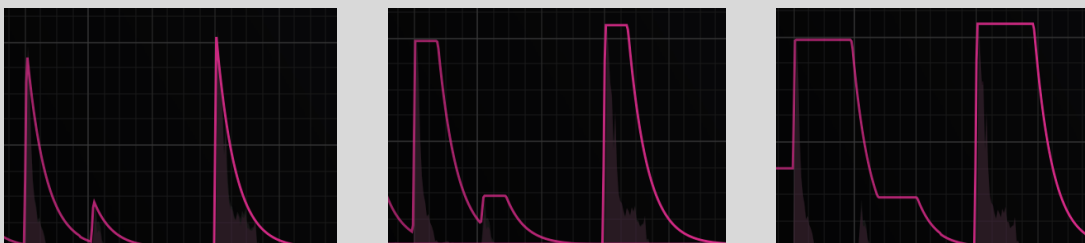

Fast attack   **Slow attack**

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.

35

- 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:
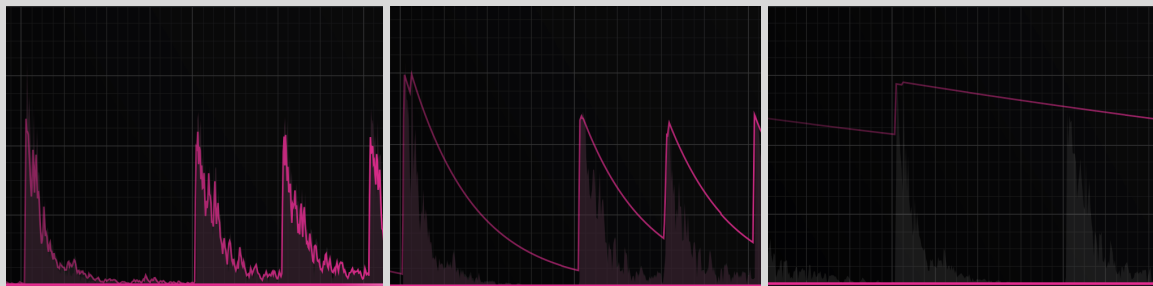
| Fast release | Slow release | Very slow release |

...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 2'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.
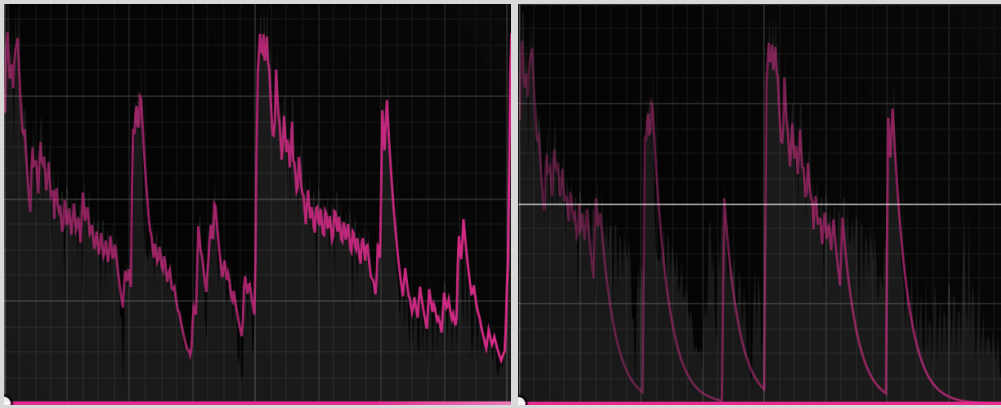
Gate disabled (-inf. dB)   **Gate at 50%**

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 2'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 2'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

Found only in FilterShaper Core 2 and WidthShaper 2, this option 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 2 combine the LFO and Envelope? The simplest way is to add them together – that's the default Add mode.
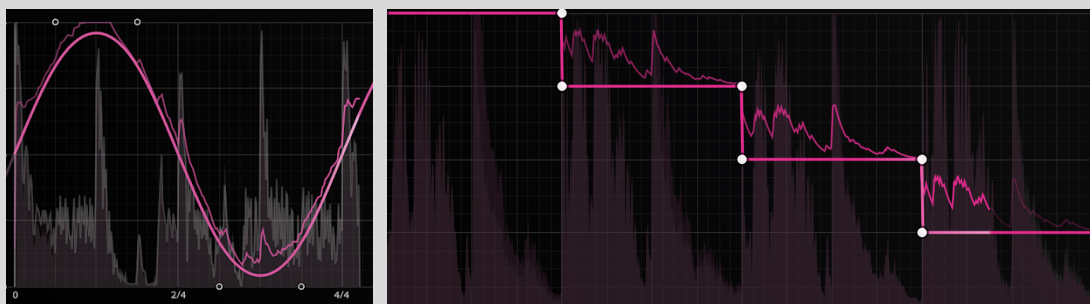
Here are a few examples of how the LFO and Envelope will stack up when added – the Envelope is using the exact same settings in all examples.
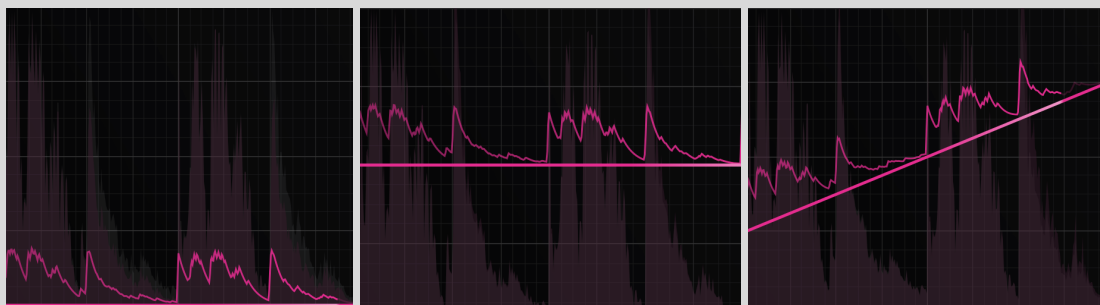
LFO at 0% position **LFO at 50% position** **Rising LFO ramp**

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).

38

💡 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 2, because they can produce silence if stuck at their lowest position (20Hz).
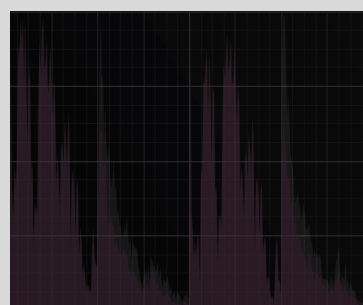
Here are some examples of Multiply mode:
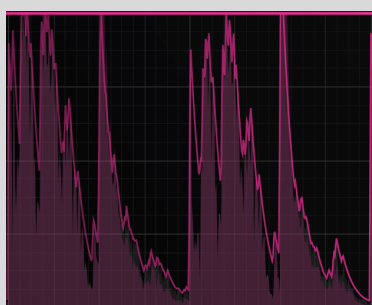
LFO at 100%
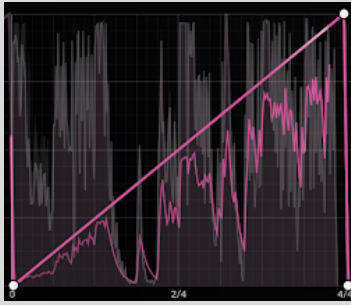
Full envelope modulation is visible

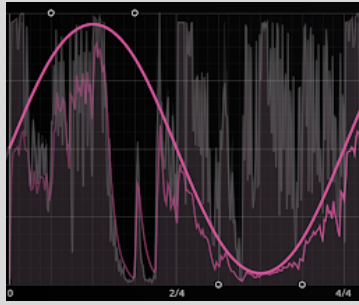**LFO at 50%**

Envelope modulation is reduced to half the height

LFO at 0%

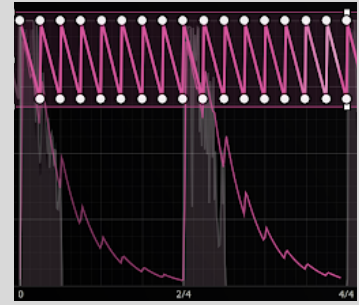**With LFO at zero, there is no modulation!**

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, 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 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 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.

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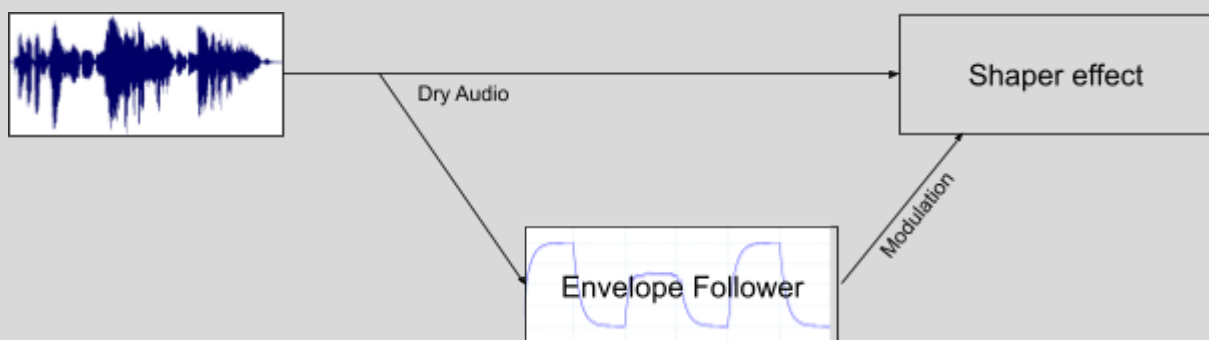
We can see that the Dry Audio signal is split in two, with one copy sent to the Shaper effect (eg, filter, distortion, noise, panner, widener) for processing, and an identical copy sent to the Envelope Follower's input.

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 is nothing to do with FilterShaper Core 2's creative filtering effects). Like this:
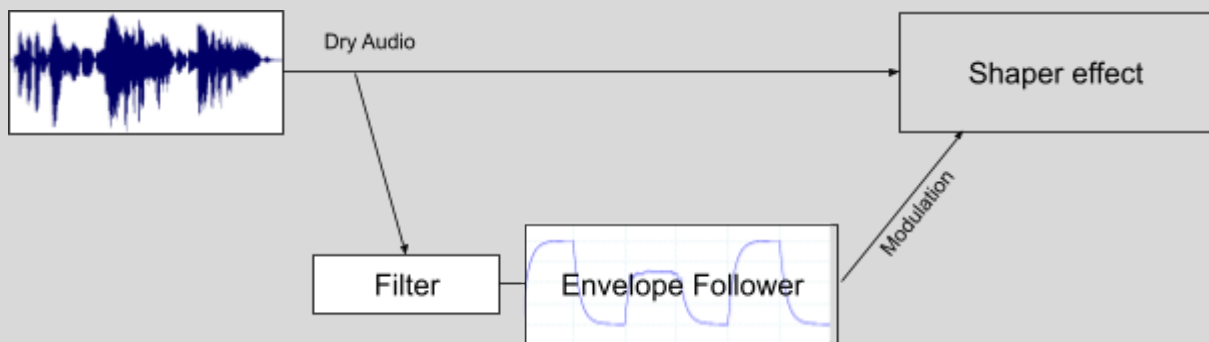
You can even route in external signals from other tracks in your project (called external sidechain routing), like this:
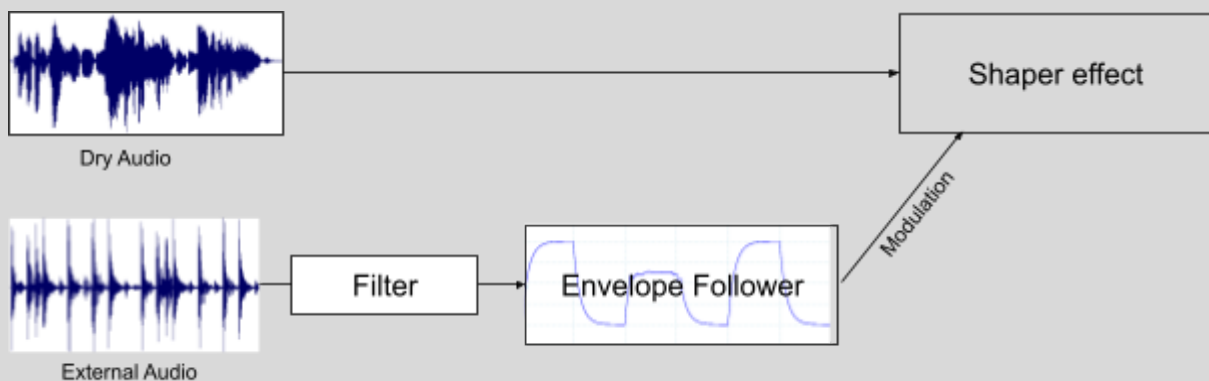
Band/Free

- **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 2's secondary inputs (ie, inputs 3 & 4). Please see your DAW's manual 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.

- **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 2's output, bypassing all other Shapers, so that you can monitor it in isolation.

Compressor (VolumeShaper 6)

VolumeShaper 6's Compressor complements the LFO's user-defined volume modulation by reacting directly to the dynamics of the input signal. It's 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'. It works per-band, and you can use it on its own or combine it with the LFO for an extra layer of dynamic control – more on this at the end of this section.

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 VolumeShaper 6's 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 emphasise the transients even more.

💡 TIP: VolumeShaper's 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 VolumeShaper 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

VolumeShaper's 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 other 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.

Band/Free

- **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 Envelope 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 2'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.

- **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 2's output, bypassing all other Shapers, so you can monitor it in isolation.

Using VolumeShaper's Compressor and LFO together

Combining the Compressor and LFO gives you access to a degree of dynamic sculpting. Here, for example, we've dialled in the Compressor so it sounds great on a drum loop, except for a couple of hi-hats that are now poking out too much, because the Compressor is not grabbing them in the same way. Instead of messing around with the Compressor

settings, potentially compromising the rest of the loop, we can just grab the Arc Pen and draw two dips in the LFO waveform, like this, to reduce the level of those two hi-hats: