

USER MANUAL

Spectral Warp

Version 1.0.0

Radically rearrange, stretch and compress frequency regions, then animate the transformed sound with snapshots, modulation, stereo spread and performance controls.



FIND YOUR WAY

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Using this manual

Begin with the interface and map chapters, then follow the modulation example. **Bold text** identifies controls and labels exactly as they appear in the plug-in.

Installation

System requirements

At 100% interface scale, Spectral Warp requires 992 × 872 pixels of usable desktop space with the modulation panel expanded, plus space for the host window frame. Interface scaling is adjustable from 75% to 200%. Display requirements refer to logical desktop resolution after operating-system scaling.

Install the plug-in

After downloading Spectral Warp, unzip the archive and run the installer. Follow its prompts to install the format supported by your DAW. The installer places the plug-in in a standard plug-in folder. Restart your DAW or run its plug-in rescan if Spectral Warp does not appear.

macOS

Standard macOS plug-in folders are:

- Audio Units (AU): `/Library/Audio/Plug-Ins/Components`
- VST3: `/Library/Audio/Plug-Ins/VST3`
- AAX: `/Library/Application Support/Avid/Audio/Plug-Ins`

Windows

Standard Windows plug-in folders are:

- VST3: `C:\Program Files\Common Files\VST3`
- AAX: `C:\Program Files\Common Files\Avid\Audio\Plug-Ins`

If your DAW does not find the plug-in, check its plug-in folder settings and run a rescan.

iLok registration

If Spectral Warp has not been authorized, the Authorization Wizard opens when your DAW scans or loads it. Create a free account at ilok.com and install iLok License Manager. After purchase, we send an email with the download link and an activation code. In iLok License Manager, choose **Activate**, paste the complete code and select your computer or an iLok 2 or later as the activation location. First-generation iLoks are not supported.

02 / GETTING STARTED

Meet Spectral Warp

Spectral Warp remaps the frequencies in a sound. The graph is the heart of the plug-in: frequencies entering along the horizontal axis leave at the frequencies shown on the vertical axis. A straight diagonal leaves the spectrum unchanged; bending the line creates the warp.

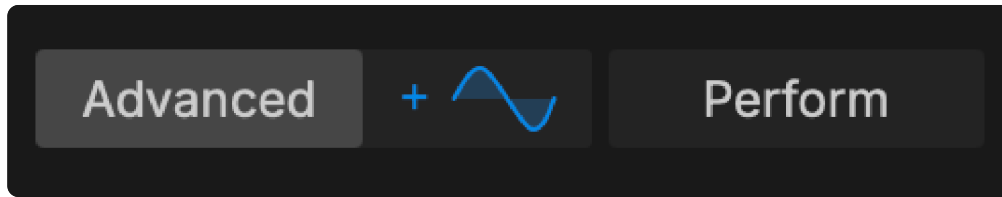
The plug-in opens in **Advanced** view. The upper area holds the frequency map and snapshots. The lower area contains **Warp**, **Delay** and **Output** processing.

Start gently. Load a sound with clear harmonic content, move **Warp Amount** down, create a simple bend in the map, then raise Amount until the transformation is easy to hear.

The spectrum traces are a visual guide. Judge the result by ear, especially when strong curves fold several input regions toward the same output range.

03 / GETTING STARTED

Three working views



The three main views: Advanced, Modulation and Perform.

The buttons in the header change how much of the system is visible.

View	Purpose
Advanced	Edit the map, snapshots and processing controls.
Modulation icon	Open or close the modulation area beneath the processing controls.
Perform	Play presets and Macros in a simplified performance layout.

The preset field sits to the right of the view controls. The arrows step through presets; **Load Preset** opens the browser. The three-dot button opens global plug-in options.

Advanced and Modulation can be used together. Perform is a separate, focused view.

Presets and options



Preset navigation and options.

Open **Load Preset** to browse sounds. Choose **Factory** or **User**, then narrow the list by subcategory and select a preset.

Saving your work

Use **Save** to update the current user preset and **Save As** to create a new one. The preset menu also lets you set the selected preset as the default, restore the factory default and choose the location used for your user presets. The delete control at the lower right removes the selected user preset.

Close returns from the browser to the editor. **Cancel** closes a save dialog without writing a preset.

Global options

The three-dot button beside the preset field contains:

- **Editor Size** — change the plug-in window size.
- **Tooltips** — show or hide contextual help.
- **Check for Updates** — look for a newer plug-in version.
- **About** — view version and credits.

The updater can check when the editor opens or when you choose **Check for Updates**. In the update dialog, choose **Don't check automatically** to turn off automatic checks. **Get Update** opens the downloads page.

Factory presets are a safe starting point. Save edited versions as User presets so the factory library remains available as a reference.

05 / THE WARP MAP

Map toolbar

The toolbar above the map controls its resolution and editing behaviour.

Control	What it does
FFT Size	Sets the spectral analysis window. Larger sizes give more frequency detail and more latency; smaller sizes respond faster.
Lin / Log	Changes the frequency spacing of the input and output axes. Log gives more visual room to low frequencies; Linear distributes equal Hz intervals evenly.
Undo / Redo	Steps backward or forward through curve edits.
Call Time	Sets how long a called snapshot takes to become active in Morph mode.
Grid	Sets the grid lines used to position snapshots in the snapshot lane.
Snap	Makes edited points follow the grid.

Call Time is inactive in Edit mode. Switch to **Morph** before using it. The Morph knob is visible in Edit mode, but it only acts on snapshots in Morph mode.

The plus and minus controls beside and below the graph zoom the output and input frequency axes. After zooming, drag the horizontal or vertical navigation bar to move through the frequency range. The reset-view button returns to the complete curve.

The plug-in reports processing latency to the host in samples. Higher FFT sizes increase latency; the equivalent time in milliseconds depends on the session sample rate.

FFT Size changes the sound as well as the display response. Recheck timing and transients after changing it.

06 / THE WARP MAP

Draw a warp map

Switch to **Edit**. The editable mapping line turns white.



Edit mode: the white mapping curve can be shaped directly.

1. Double-click the white line to add a breakpoint.
2. Drag a breakpoint to change its input and output position.
3. Double-click a breakpoint to enter exact input and output frequencies.
4. Drag the line between two breakpoints up or down to shape that segment.
5. Shift-drag a breakpoint vertically to shape its incoming and outgoing curves together.

The horizontal position represents the incoming frequency; the vertical position represents its destination. The straight diagonal is therefore the neutral map.

Each snapshot stores its own curve. Check the blue selection indicator in the snapshot lane before editing.

07 / THE WARP MAP

Snapshots and Morph

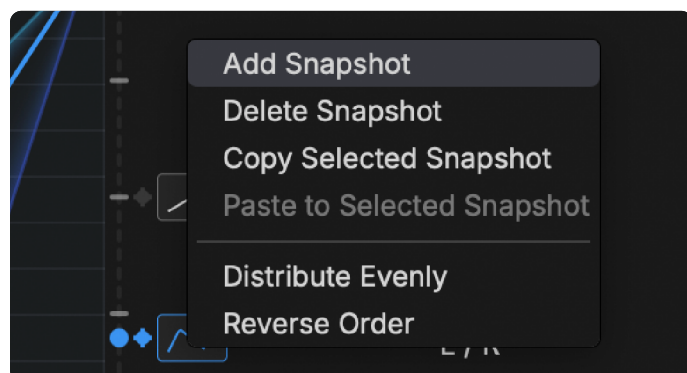
The lane to the right of the map stores several curves. The selected snapshot is blue; edits always affect that snapshot. You can edit a snapshot's curve shape only in **Edit** mode.

Double-click an empty lane position to add and select a snapshot.



Morph mode: the blue result moves through the stored snapshots.

Right-click a snapshot to open its context menu. Choose **Add**, **Delete**, **Copy**, **Paste**, **Distribute** or **Reverse** snapshots.



Snapshot commands in the right-click menu.

Switch to **Morph** and turn the **Morph** knob to move continuously through the stored curves. Calling a snapshot moves toward it over the duration set by **Call Time**.

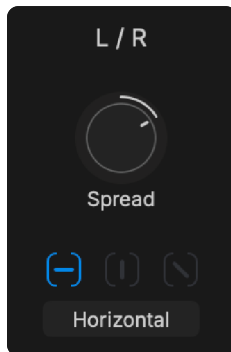
Distribute spaces snapshots evenly across the Morph range. **Reverse** flips their order. Both commands are in the snapshot's right-click menu and make it quick to restructure a movement without redrawing its curves.

Morph is a continuous position, so it can also be automated or modulated. Snapshot selection and Morph position are related, but they are separate controls.

08 / THE WARP MAP

Stereo Spread

Spread offsets the warp mapping between the left and right channels. At zero, both channels use the same map. Increasing the amount produces contrasting spectral movement and width.



Spread amount and direction controls.

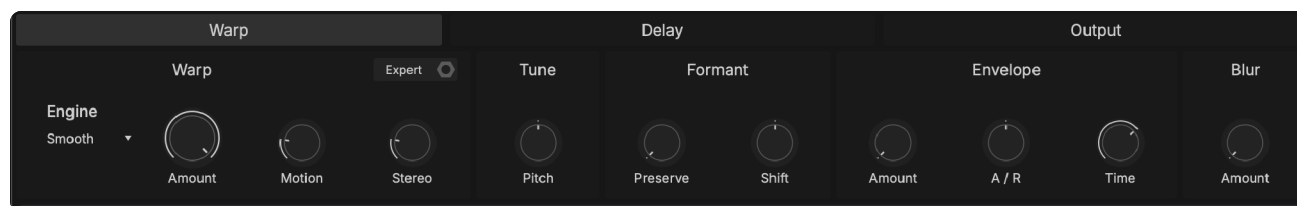
Choose how the two channel maps diverge:

Direction	Movement
Diagonal	Offsets the map along both input and output frequency axes.
Horizontal	Offsets the input-frequency position of the mapping.
Vertical	Offsets the output-frequency destination.

The direction buttons sit below the Spread knob. With mirrored spread, corresponding breakpoints move in opposite directions for the two channels. Strong settings can make left and right differ dramatically.

09 / PROCESSING

Warp controls



Warp controls with the Expert button.

Section	Controls
Warp	Engine selects Smooth or Clean ; Smooth is the default. Amount blends the curve mapping from 0% (no curve effect) to 100% (fully applied). Motion adds evolving phase movement. Stereo shifts phase differently between channels to create width; at 0% it adds no extra stereo effect. Expert opens Balance, Motion, Stereo and Denoise settings.
Tune	Pitch transposes the processed signal from -24 to +24 semitones. This changes pitch after the spectral remapping.
Formant	Preserve keeps vocal and resonant character steadier while the spectrum is warped. Shift moves the spectral envelope up or down without transposing the pitch.
Envelope	Amount smooths the level changes of individual frequency components before Blur. A / R chooses what is smoothed: left softens attacks, right extends releases, and centre applies both. Time sets the smoothing duration from immediate to long.
Blur	Amount smears spectral detail over time. Higher settings produce a more diffuse sound and longer spectral tails.

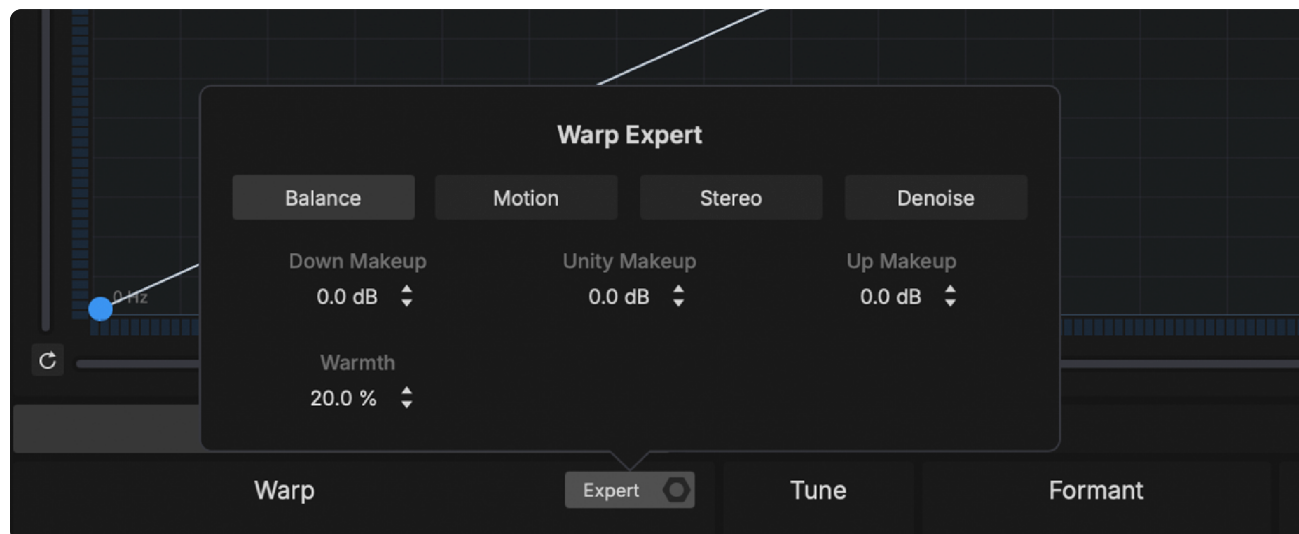
At zero, **Motion**, **Envelope Amount** and **Blur Amount** are off. This makes it easy to isolate what each stage contributes.

The on-screen **Pitch** control snaps to whole semitones. Existing fractional values and host automation remain continuous.

Open **Expert** in the Warp section to access **Balance**, **Motion**, **Stereo** and **Denoise**. Drag a value to adjust it; click its arrows or use the mouse wheel for fine changes. Double-click a value to restore its default. Click **Expert** again, click outside the popup or press Escape to close it.

Warp Expert

Balance and Warmth



Warp Expert: Balance controls for makeup and Warmth.

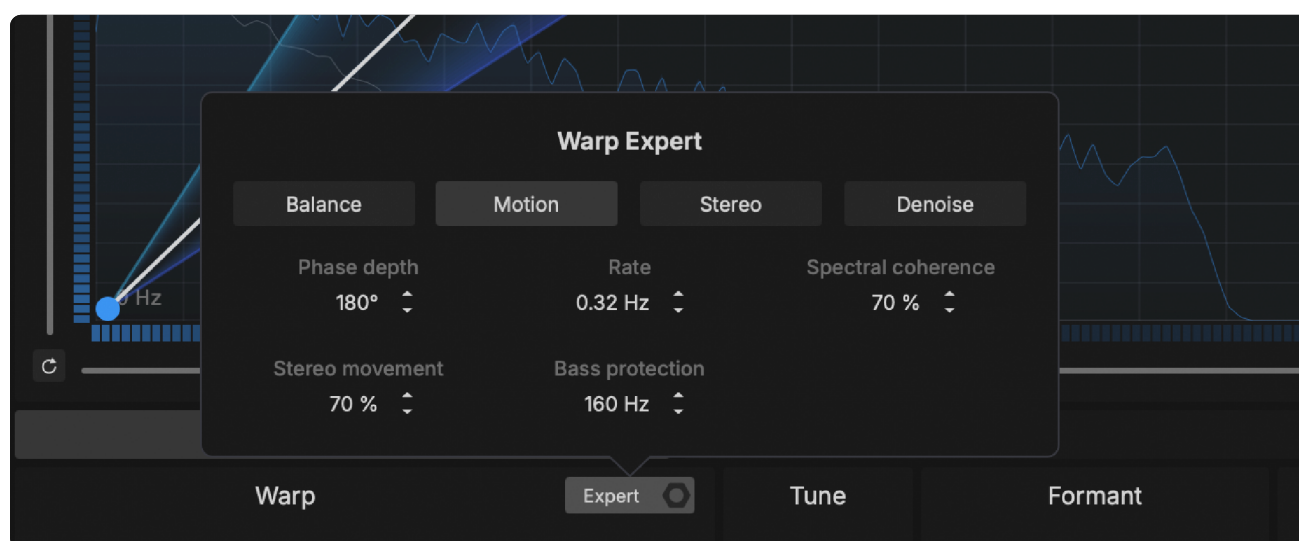
Down Makeup adjusts the wet level when warping frequencies downward. The gain blends gradually from **Unity Makeup** toward this value as the downward shift increases.

Unity Makeup sets the wet gain when input and output frequencies match. It is also used for curves that do not support directional makeup.

Up Makeup adjusts the wet level when warping frequencies upward. The gain blends gradually from **Unity Makeup** toward this value as the upward shift increases.

Warmth gently reduces high frequencies. At 0% there is no reduction. With the default tuning, the reduction begins above 1.5 kHz and reaches its selected maximum at 12 kHz: 25% gives up to -3 dB, 50% up to -6 dB, and 100% up to -12 dB. New instances start at 25%.

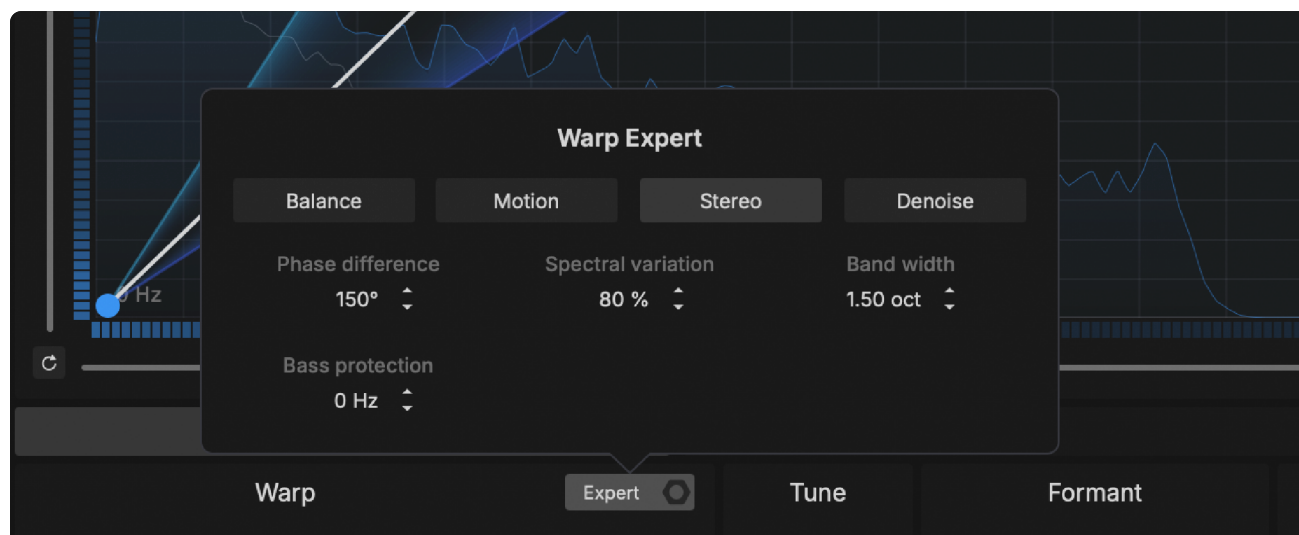
Motion



Warp Expert: Motion controls.

Phase depth sets the maximum phase movement; **Rate** sets its speed. **Spectral coherence** controls how closely frequency regions move together, while **Stereo movement** controls how independently the left and right channels move. **Bass protection** reduces phase movement below its selected frequency.

Stereo

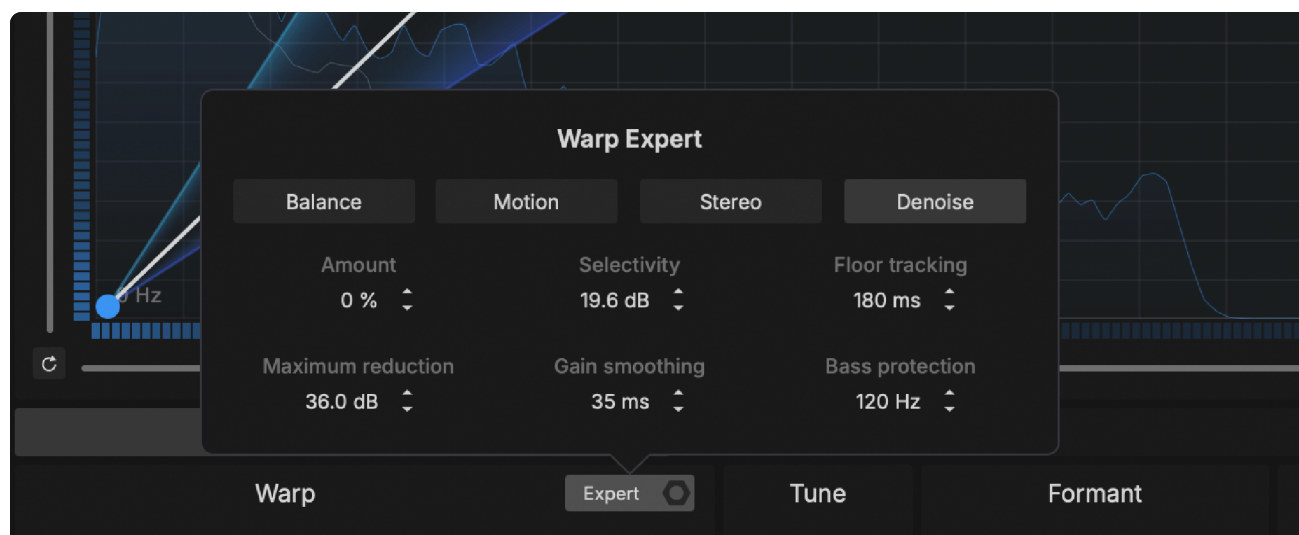


Warp Expert: Stereo controls.

Phase difference sets the maximum phase offset between channels; the main **Stereo** control sets its strength. **Spectral variation** changes how the phase pattern varies across frequency regions, and **Band width** sets the size of those regions in octaves. **Bass protection** reduces widening in low frequencies; 0 Hz turns protection off.

Stereo Spread often sounds more balanced in **M/S** mode because the two maps act on centre (Mid) and side information, rather than on left and right speakers independently. This tends to keep the centre more stable while the Side channel adds contrasting movement and width. Use moderate Spread first, then compare in mono. Complex maps can create a much stronger stereo contrast than simple curves.

Denoise



Warp Expert: Denoise controls.

Denoise is an adaptive spectral gate after the Warp engine. **Amount** controls its strength; at 0% it is off. **Selectivity** sets how far a frequency component must rise above the estimated local noise floor to pass unchanged. **Floor tracking** sets how quickly that estimate follows the input. **Maximum reduction** limits the attenuation, and **Gain smoothing** softens its changes. **Bass protection** excludes frequencies below the selected value from reduction; 0 Hz turns it off.

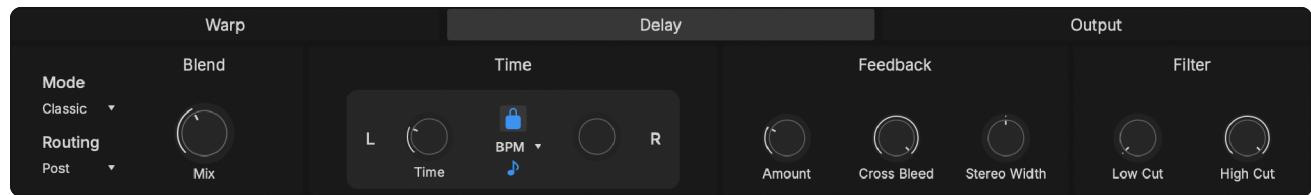
A useful order

Set the map and **Warp Amount** first. Add **Pitch** and the two Formant controls next, then introduce Motion, Envelope and Blur for movement and sustain. If the result loses definition, shorten Envelope Time or reduce Blur before reducing the main warp.

Motion and Stereo work on phase, while Envelope and Blur work on spectral level over time. Similar-looking amounts can therefore produce very different results.

10 / PROCESSING

Delay



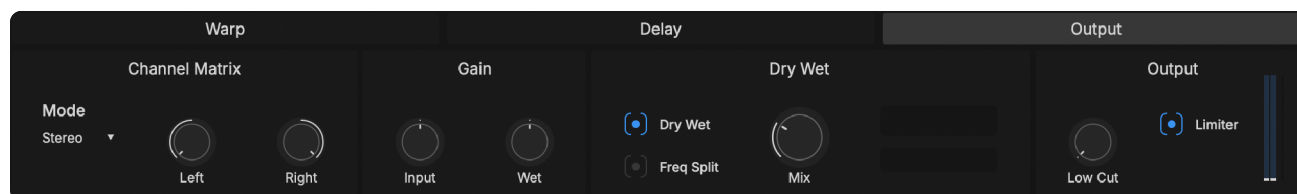
Delay controls.

Section	Controls
Mode	Choose Stereo for separate left/right delay paths or Classic for alternating ping-pong repeats.
Blend	Mix balances the undelayed and delayed signals. Stereo Width ranges from mono at 0%, through the original width at 100%, to additional widening above 100%.
Time	Choose milliseconds or host-tempo sync. Tempo mode offers regular, triplet and dotted divisions. Link couples left and right; unlinked mode exposes separate L/R times, while a linked millisecond delay can use R Offset .
Feedback	Amount returns the delay output to its input. Values above 100% can make repeats grow. Cross Blend moves feedback between the same and opposite channels. Kill FB stops feeding new repeats back into the delay line.
Filter	Low Cut removes lows and High Cut removes highs inside the feedback path, so each repeat can become lighter or darker.

Raise Feedback carefully. Growing repeats can become loud, especially before resonant warp settings.

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Output



Output controls.

Section	Controls
Channel Matrix	Stereo uses standard left/right processing. M / S encodes and processes Mid/Side. Decode expects a Mid/Side input and converts it for output.
Channel controls	In Stereo, Left and Right position the processed channels in the stereo field. In M/S modes, the controls become Mid Gain and Side Gain .
Gain	Input sets the level entering the processing chain. Wet sets the level of the processed path before it is blended or split.
Dry Wet	Mix blends the latency-compensated dry signal with the processed wet signal.
Freq Split	X Over sets the crossover between dry and wet frequency bands. Swap exchanges which band is dry and which is wet.
Output	Low Cut removes frequencies below its cutoff from the wet signal; its minimum position is Off. Limiter controls output peaks to prevent clipping.

The **Dry Wet** and **Freq Split** buttons select alternative routing modes. Their centre controls change accordingly: Mix belongs to Dry Wet; X Over and Swap belong to Freq Split.

In **Decode** mode, the plug-in expects a Mid/Side input and converts it for output. **M / S** mode encodes the input before Warp, then decodes and pans within the spectral path before Envelope, Blur, Motion and Stereo. Check mono compatibility and output level when combining Decode with Stereo Spread.

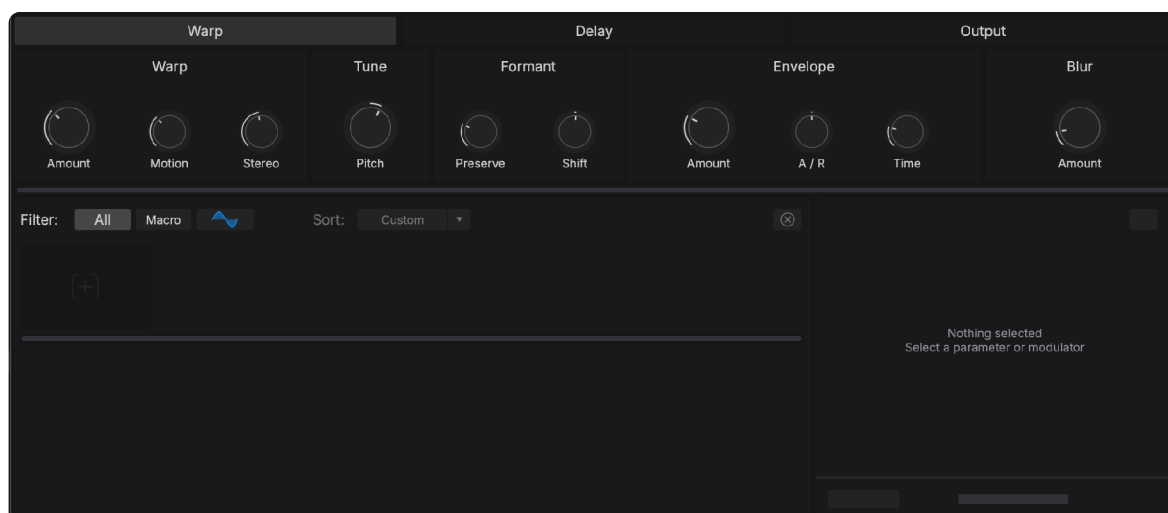
12 / MODULATION

Build a modulation system

Click the waveform icon beside **Advanced** to open modulation.

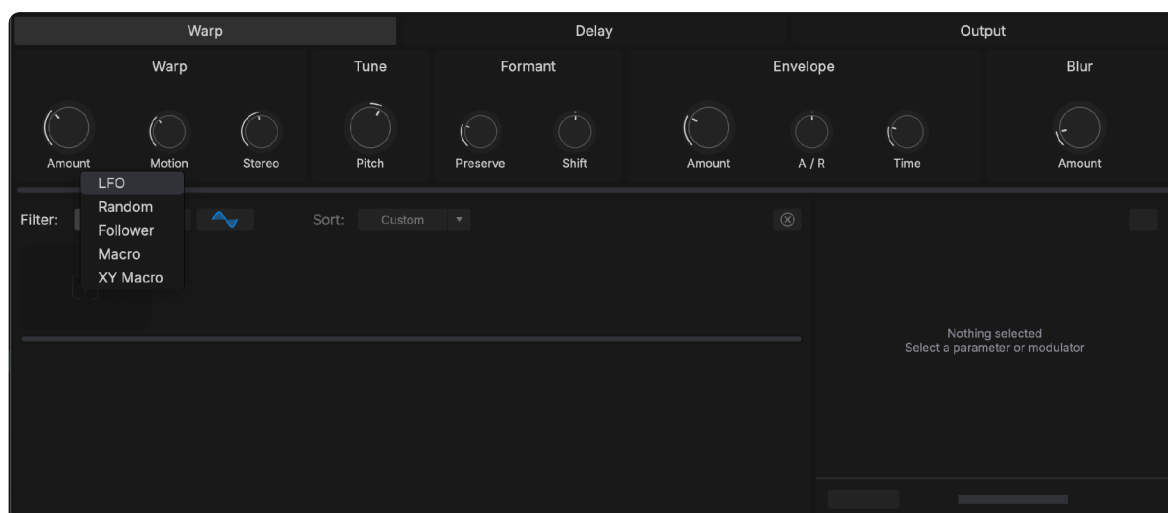


The waveform button opens the modulation area.



The empty modulation area.

Click **Add** and choose **LFO**, **Random**, **Follower**, **Macro** or **XY Macro**.



Add an LFO, Random source, Envelope Follower, Macro or XY Macro.

The filter buttons show **All**, only **Macros**, or only **Modulators**. The sort menu can place Macros first, Modulators first, or keep a custom order. Use delete mode to remove individual sources.

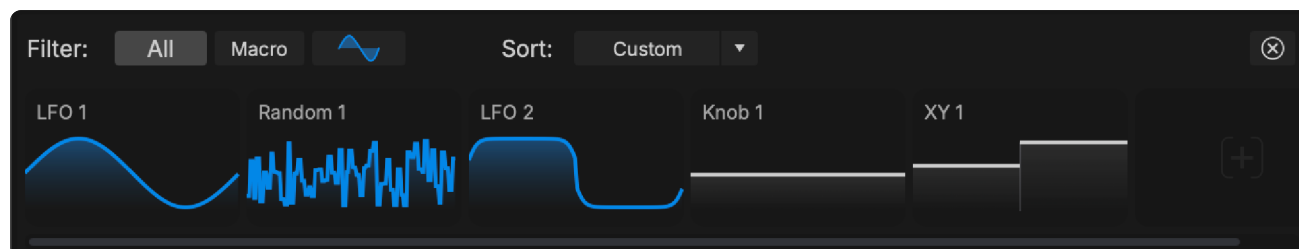
Select a card to open its detailed controls at the bottom. The same card can be assigned to several parameters, and a parameter can receive several sources.

Use a source's on/off control to bypass that Modulator without deleting it or its assignments.

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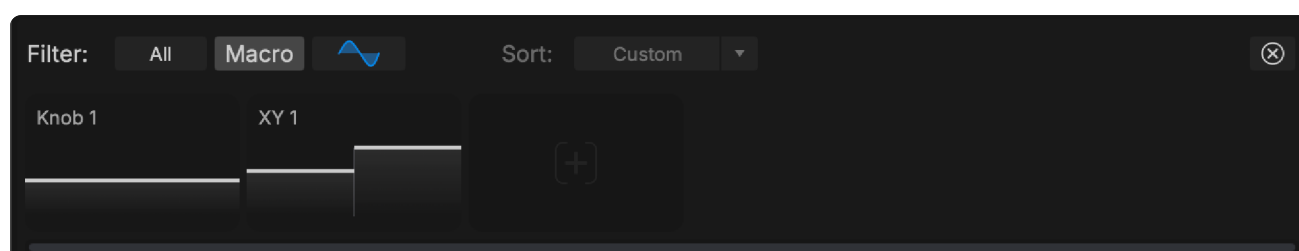
Organize modulation sources

Use the filter row to control which cards are visible without changing any assignments.



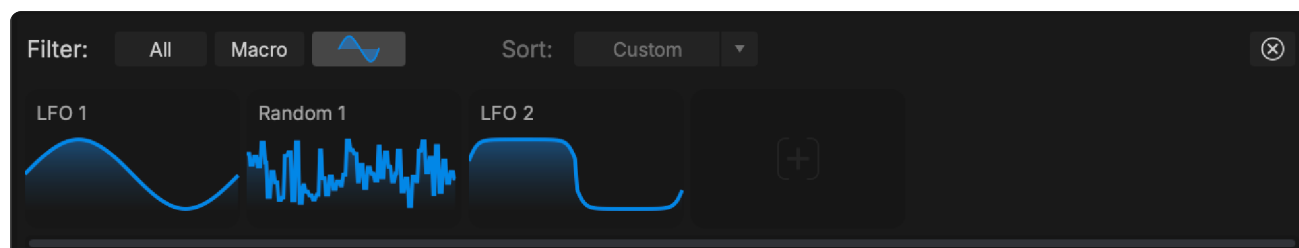
All shows Macros and Modulators together.

All shows Macros and Modulators together.



Macro filter.

Macro shows only the performance controls: Macro and XY Macro.



Modulator filter.

The **Modulators** filter shows LFO, Random and Envelope Follower sources.



Sort with Macros first.

The **Sort** menu places Macros first, Modulators first or preserves a custom order. Sorting changes the card layout only; it does not change assignments.

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Delete a modulation source

Click the delete button in the source row to enter delete mode. Red crosses appear on Modulators and Macros that can be removed.



Source delete mode.

The grey button with the white X above the source list shows that delete mode is active. Select the source you want to remove, then leave delete mode when you are finished.

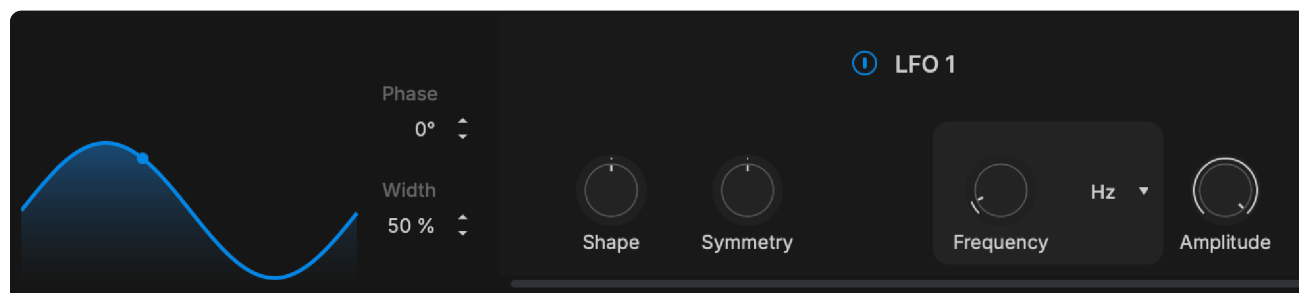
Deleting a source also removes every assignment made from it. If the source should remain available, use assignment delete mode instead and remove only the unwanted connection.

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Modulators

Modulators create movement automatically. Spectral Warp provides an LFO, a Random source and an Envelope Follower.

LFO

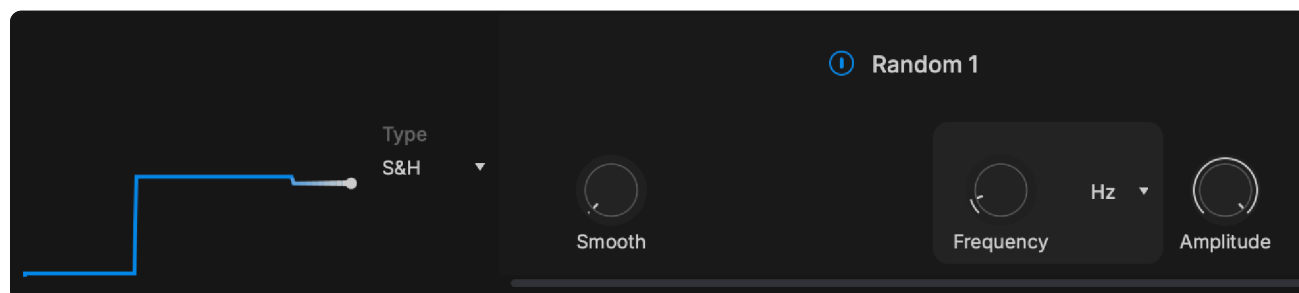


LFO controls.

The **LFO** repeats a predictable cycle. **Frequency** sets its rate; choose Hz for free-running motion or tempo sync for regular, triplet and dotted divisions. **Phase** selects where the cycle begins. **Shape**, **Symmetry** and **Width** change the contour, while **Amplitude** scales the source output. In the waveform editor, drag points to reshape the cycle; double-click to add or remove points.

An LFO running in Hz mode resets when the DAW transport starts. Tempo-synced timing continues to follow the host tempo.

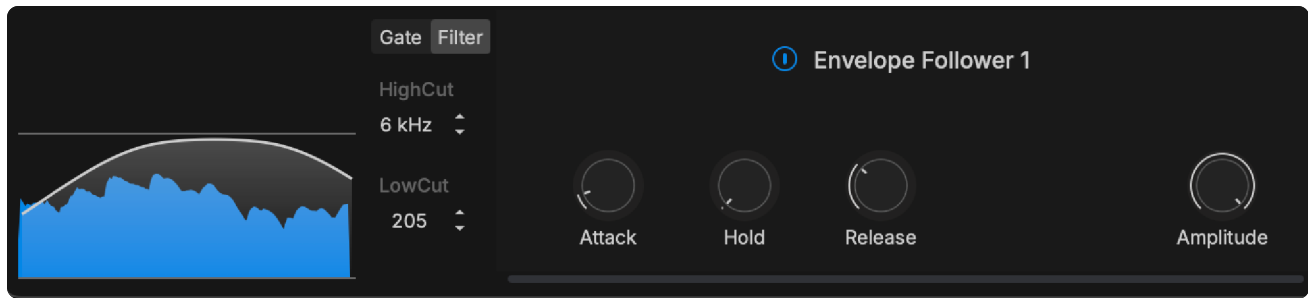
Random



Random in Sample & Hold mode.

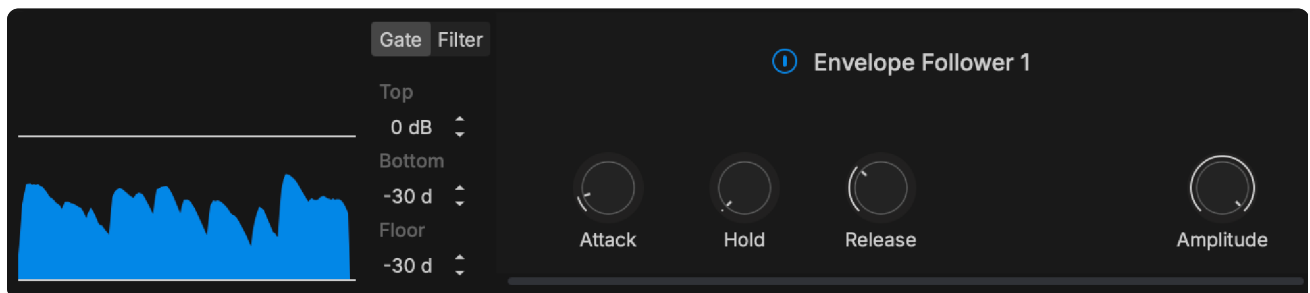
Random creates non-repeating movement. Its four modes range from hard two-state switching to smooth noise and gradual wandering. Every Random mode is explained in the next section.

Envelope Follower



Envelope Follower sidechain filter.

The **Envelope Follower** turns the level contour of an audio signal into modulation. **Low Cut** and **High Cut** focus its detector on a chosen frequency range without filtering the audible output.



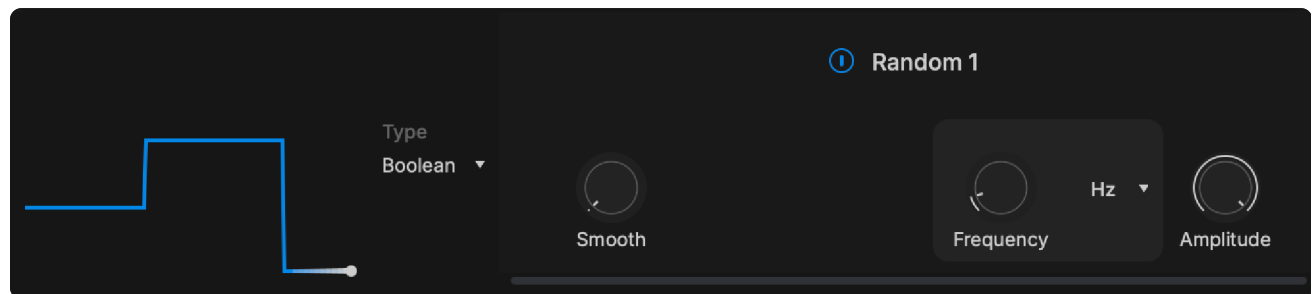
Envelope Follower response controls.

Bottom, **Top** and **Floor** set the useful input range. **Attack**, **Hold** and **Release** shape the response, while the **Gate** prevents low-level noise from moving the destination.

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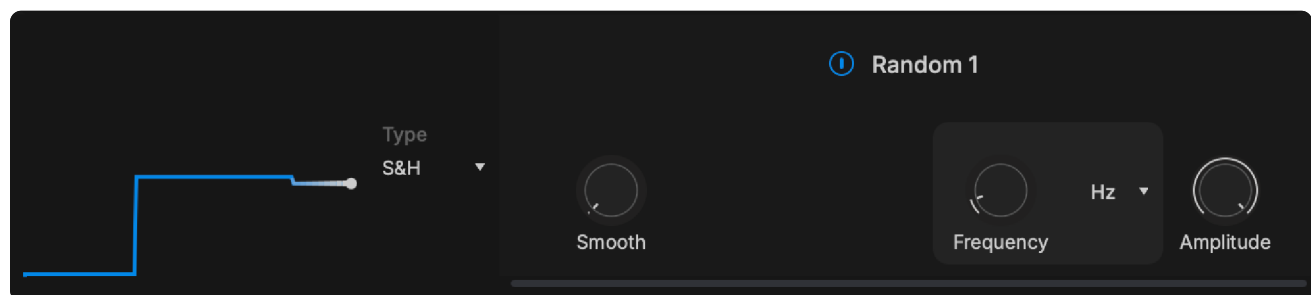
Random modulators

Random creates non-repeating movement in four distinct ways.



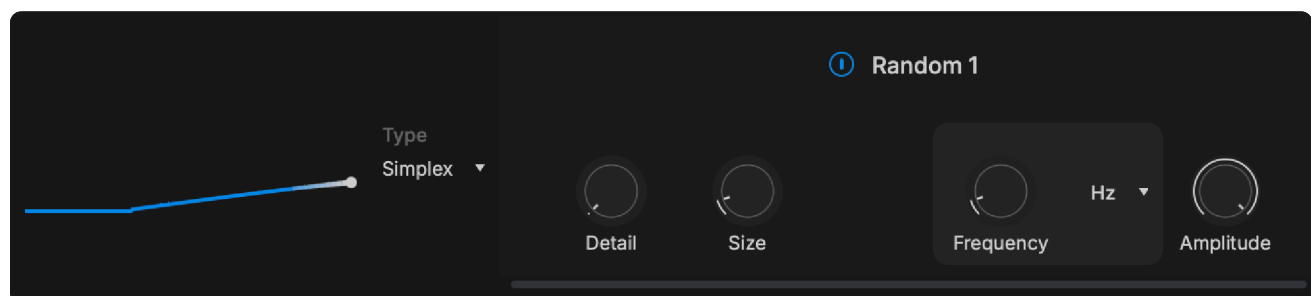
Random in Boolean mode.

Boolean switches between two states. Use it for clear on/off changes, alternating values or abrupt changes between two parts of a sound.



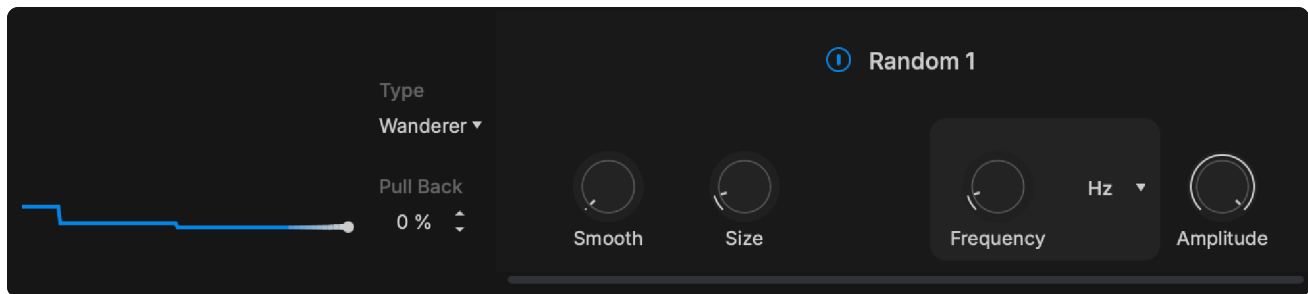
Random in Sample & Hold mode.

Sample & Hold chooses a new random value at each step and holds it until the next one. **Smooth** blends between values instead of jumping directly.



Random in Simplex mode.

Simplex creates continuous, related motion rather than isolated jumps. **Detail** adds finer movement within the larger contour.



Random in Wanderer mode.

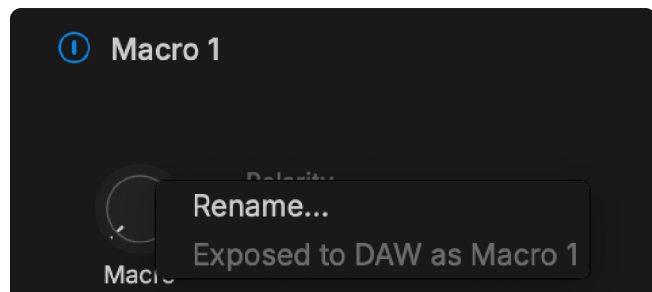
Wanderer takes a random walk through the range. **Step Size** controls how far it can move at once, and **Pull Back** draws it toward the centre after each step.

All modes share rate and amplitude controls. Choose Hz for free-running movement or synchronize the timing to regular, triplet or dotted host divisions.

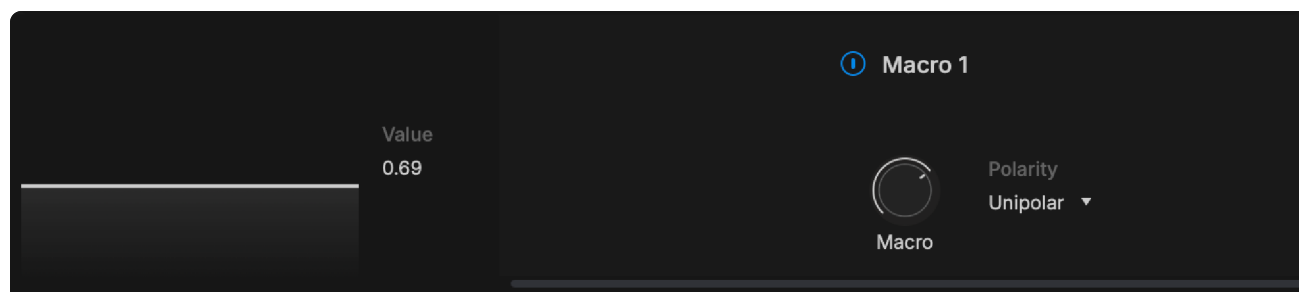
17 / MODULATION

Macros and XY control

A **Macro** collects several assignments behind one playable control. Rename it so its purpose is clear in Perform view.



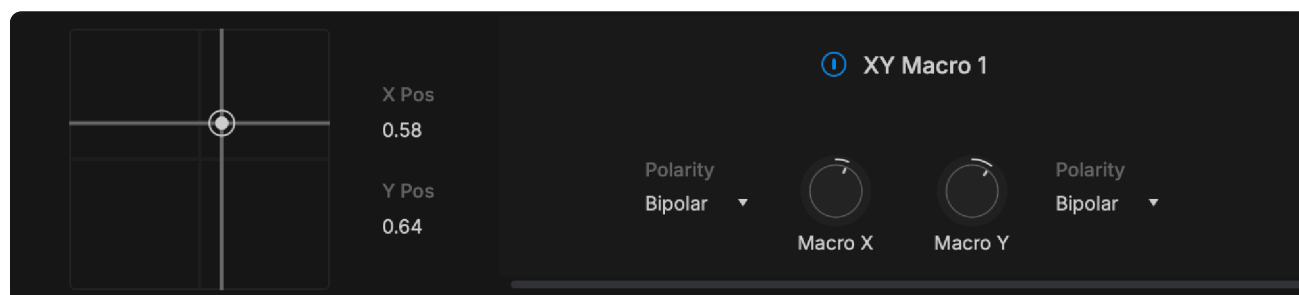
Rename a Macro to make its performance role clear.



Macro control.

Macro polarity applies to all of that Macro's assignments. Individual assignment depths still determine how far and in which direction each destination moves.

An **XY Macro** provides two independent axes for coordinated gestures.



XY Macro controls two axes at once.

Assign destinations independently to **Macro X** and **Macro Y**. Each axis has its own global Unipolar or Bipolar setting, which applies to every assignment made from that axis.

Macros are performance sources and cannot themselves be modulated. Modulator controls, such as an LFO rate, can accept modulation where the interface shows a blue assignment ring.

Name Macros by intent — for example *Open*, *Scatter* or *Freeze* — rather than by a single destination.

18 / MODULATION

Create an assignment

Drag a Modulator or Macro card onto any eligible control. A blue ring identifies controls that accept modulation.



Drag a modulation card onto a control with a blue assignment ring.

Drop the card when the destination highlights. The connection is created immediately and appears in the assignment monitor. Open it there to set its range and direction.

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Assignment monitor

The assignment monitor shows the source, destination and modulation amount.



The assignment monitor shows the LFO connected to Warp Amount.

Adjust the amount to set depth and direction. A positive value moves with the source; a negative value moves against it. The assignment can be bypassed without deleting it.

Choose one-way or bipolar polarity around the base value. Unipolar destinations normally begin with one-sided modulation; bipolar destinations can move around their centre.

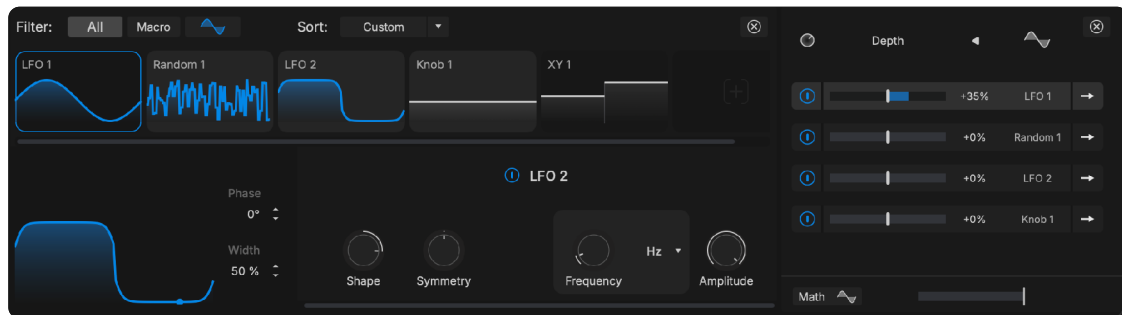
The destination's value ring shows the combined modulation range. You can edit the assignment without changing the LFO itself.

The source defines the motion; the assignment amount defines how strongly that motion reaches one destination.

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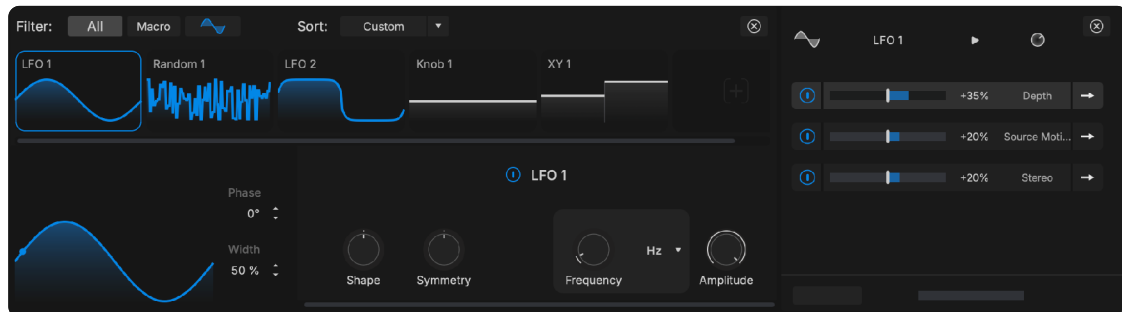
Manage assignments

Select a modulation source to see all destinations driven by that source.



Select a source to see every parameter it controls.

Select a parameter instead to see every source that reaches that destination.



Select a parameter to see every source assigned to it.

These two views answer opposite questions: “Where does this source go?” and “What is moving this parameter?”

The source tabs can scroll horizontally when more Modulators and Macros are loaded than fit in the row.

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Multiple sources, one parameter

Add another source at any time. Existing connections remain active.



A Random source added beside the LFO.

Drag the new source onto a parameter that already has an assignment. Both sources now appear at that destination.



Two sources assigned to the same parameter.

Each assignment keeps its own amount, polarity and bypass state. The value ring around the destination shows their combined range.

Select the destination whenever you want to compare all sources that contribute to its movement.

22 / MODULATION

Assignment Math and delete

When several sources control one parameter, **Math** determines how they combine. Choose **Add** to sum a contribution or **Mult** to multiply the result above it.



Math options for multiple assignments.

Drag assignments to change the order in which Add and Mult are calculated.

Reordering matters when Add and Mult are mixed, because the operations are evaluated from top to bottom.

Enter assignment delete mode to remove a connection without deleting its source. The red cross identifies the assignment that will be removed.



Delete mode identifies removable assignments.

23 / PERFORM

Perform

Perform view is the destination for a finished sound. It keeps the morphed result visible while presenting the Macros designed for playing and automation.



Perform view with Macro controls.

Build the sound in Advanced view, create and name the useful Macros, then switch to **Perform**. Use the Macro controls for broad gestures and the preset controls to move between prepared sounds.

Because Perform view hides curve editing and modulation construction, it is easier to use during a session or live performance. Return to Advanced whenever the underlying map, processing or assignments need adjustment.

If the Perform strip is empty, it shows **No macros yet** and **Add a Macro or XY Macro in Advanced view**. Create a Macro or XY Macro in Advanced view to add playable controls.

A practical workflow

1. Draw two or more snapshots.
2. Balance Warp, Delay and Output.
3. Add modulation for continuous movement.
4. Map the most useful destinations to named Macros.
5. Save the result as a User preset.
6. Switch to Perform and play the Macros.

Thank you for reading through the Spectral Warp user manual. We hope that this guide has provided you with a comprehensive understanding of the plug-in's installation, setup, and various features. Experiment with the various parameters and modes to discover new and unique ways to enhance the emotional impact of your audio. If you have any further questions or concerns, please don't hesitate to contact our support team.

Happy sound designing!