STEREOWEAVER

Mono-to-Stereo Spatial FX

KAONA

Ingenious Instruments for Creative Minds

Presentation

Stereoweaver is a Eurorack module designed to create and explore a stereo image from a mono source.

Rather than a simple "stereo widener," **Stereoweaver** combines depth, micro-delays, and movement to generate a credible and musical stereo image, ranging from a subtle opening to unusual and highly pronounced spatial textures.

By relying on psychoacoustic principles (the Haas effect), Leslie-type rotational movements, dynamic phase processing, and panning movements, the module offers original and creative effects, while remaining simple to use thanks to a clear layout and a compact format.

Specifications

Width: 10 HP

Power consumption: +12 V: 140 mA; –12 V: 20 mA; +5 V: 0 mA

Depth: 28 mm


STEREOWEAVER
Depth
rotary
Phase
Motion
move
Haas
Width
IN MONO
OUT L
OUT R
depth
phase
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width
KAONA

Operation

Level management

Mono input, stereo output: Eurorack-level signals, with analog processing (filtering, attenuation, and amplification) to ensure clean integration in a system.

Input level: Stereoweaver provides an input gain control to accommodate a wide range of source levels.

Clip warning LED: a blinking LED indicates a risk of input saturation. Reducing the input level (or the source level) until the blinking disappears helps preserve dynamics and avoid unwanted distortion. However, it is also possible to deliberately drive the input to use this distortion as an additional coloration that influences the behavior of the effects.

Output levels: the left and right output levels are adjusted independently, in order to precisely balance the stereo image and adapt the module to the rest of the system.

CV inputs: The CV inputs are summed with the settings of the corresponding potentiometers, with an influence determined by the position of those potentiometers (attenuation/modulation amount). The CV inputs are bipolar (±5 V). It is therefore possible to add to or subtract the CV value from the position of the corresponding potentiometer.

Depth

Depth affects the sense of depth and relief of the stereo space, and sets the amount of effects by progressively reinforcing their interactions:

– low: a more direct, more “front” rendering;
– high: a deeper, more enveloping and organic stage;
– very high: toward the end of the travel, micro-chorus and micro-phasing type effects may appear due to phase interactions.

Phase

Phase shifts the phase relationship between the channels over a 0 to 180° range, interacting with the other settings. This parameter strongly contributes to the signature of the stereo image: stability, diffusion, coherence, and a more or less “strange” and unusual character.

The **Phase CV input** makes it possible to animate this character and make the spatial color evolve over time.

Motion

Motion controls the animation of the stereo image (movement, displacement, spatial modulation), from subtle to very pronounced:

– slow: an organic impression, a “living” but discreet stereo;
– fast: more obvious animation (displacement, spatial modulation).
– **Rotary:** in this position, a Leslie-type effect is enabled, with a gradual speed. Two “speakers” (low and high) are simulated, including their speed offset, as well as amplitude and phase variations.

Depending on the **Depth** setting associated with **Motion**, the character of the movement varies (more “animated width,” more “chorus/spatial,” etc.). When **Width** is in **Move** mode, **Motion** sets the speed of the displacement.

The LED associated with Width makes it possible to visualize the movement induced by Motion.

Haas

Haas introduces a slight delay between the channels in order to create a sense of space and presence without an echo effect. The Haas control applies an inter-channel micro-delay (Haas principle):

– moderate setting: increased presence, natural and readable stereo;
– high setting: a more characterful and more expressive effect.

Transitions of the Haas effect are smoothed by an internal morphing over a few milliseconds in order to avoid, as long as possible, overly abrupt saturations and distortions. The onset is progressive and non-linear, and an LED indicates the interaction of Haas with the signal.

The **Haas CV input** makes it possible to animate the sense of space over time.

Width

Width gradually widens the stereo image while progressively hollowing out the center. An LED indicates the influence of Motion on the widening movement, left/right displacement, etc.

The **Move** parameter (associated with **Width**) introduces a dynamic variation of the width and/or stereo placement: the image stops being static and gains a sense of life and movement. In **Move** mode, the left and right channels progressively exchange their levels at a speed defined by **Motion**, with an amplitude dependent on **Phase**. At the maximum setting, the displacement becomes more chaotic.

The **Width CV input** makes it possible to animate **Width** and Move and make the stereo scene evolve.