VORTICES

HiFi

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Overview

Vortices HiFi is a limited release version of the original Vortices. The HiFi version offers the same mixing topology without the tape compression, overdrive and high frequency roll-off. All inputs of the HiFi version are DC coupled, now allowing use as a full spectrum control voltage mixer in addition to audio. Featuring a total of 14 inputs and 7 outputs in a relatively compact 16hp form factor (18hp with VCA CV expander).

Vortices accommodates mono and stereo sources, broken respectively into two mix bus sections, providing separate mix outputs as well as a Master Mix split stereo output and a Master stereo jack output on the back of the module.

The separated outputs and auxiliary inputs are provided to accommodate effect chains, feedback patching and end of chain mixing solutions as well as general sound processing, panning and cross fading applications.

Auxiliary Mono mix inputs provide additional unity gain inputs to the mono and stereo mixers for summing external mixes, fx returns and other general uses.

The headroom of all final mix outputs is approximately 20Vpp before additional hard clipping of the summed mixes occur.

MONO MIXER DETAIL

AUDIO INPUTS

The Mono Mix bus features 4 main mono inputs, each with a level control via the mini-pots. Nominal volume level is set when these controls are at maximum

Inputs 1 & 4 feature manual and voltage control over stereo panorama (PAN).

Inputs 2 & 3 feature manual and voltage controlled cross-fading (X-FADE).

The PAN and X-FADE functions feature unique linear pan/fade laws. Linear laws nominally produce a -6dB dip when the relative control is set to center position. If you are unfamiliar with the decibel scale, this is equal to a gain reduction of 0.5x.

Vortices offers a linear law with only a -1.3dB center dip, equal to a gain reduction of approximately 0.86x, an improvement over what even constant power laws can provide.

There are two additional auxiliary M-AUX 1 and M-AUX 2 mono inputs to the MONO MIXER near the top of Vortices on the left and right sides of the module. These are provided for external sources and sub-mixes as well as possible feedback patch points. These are monophonic; meaning the signal will sum equally onto both the Left and Right MONO MIXER OUTPUTs. These are unity gain inputs on this HiFi version.

AUDIO OUTPUTS

There is a direct output for MONO channels 2 & 3 at the top middle of Vortices labeled X-FADE. Patching out here will break these channels out of all the associated MIX outputs (MONO MIX and MASTER MIX.) Therefore, you can either use the cross fading feature separately from the rest of the module or send these channels out for additional processing and back into a Vortices AUX or Stereo Input or into another available Mono input channel for panning, etc.

The MONO MIXER output is split stereo to accommodate channel panorama. The LEFT (**L**) and RIGHT (**R**) MONO MIXER OUTPUTs are located on either side of the X-FADE breakout jack.

PAN & X-FADE CV

CV inputs for PAN and X-FADE point to the associated manual controls for each function with golden arrows. The gold boxes visually connect each Mono Input to the respective CV input and manual control. CV inputs expect a symmetrical +/-5V control voltage as standard, however any signal is permitted without damaging these inputs.

QUICK-VIEW: Mono Mixer Bus

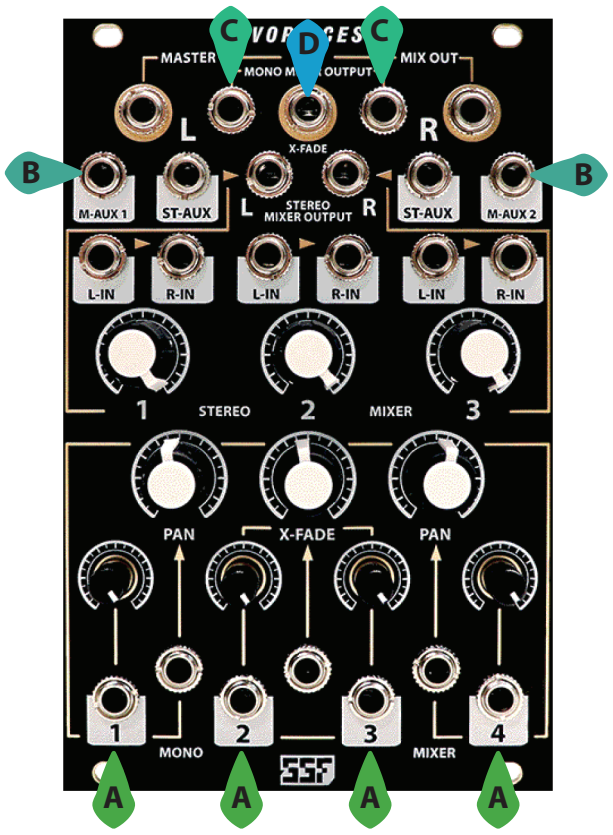
Mono Mixer: Audio IN/OUT

A — *Main Monophonic Inputs 1, 2 , 3, 4*

B — *Auxiliary Monophonic Inputs 1 & 2*

C — *Split Stereo (L/R) Direct Output of the MONO MIXER Bus*

D — *Direct X-FADE output for Channels 2 & 3 (Breaks normalization to all Mix Outputs)*

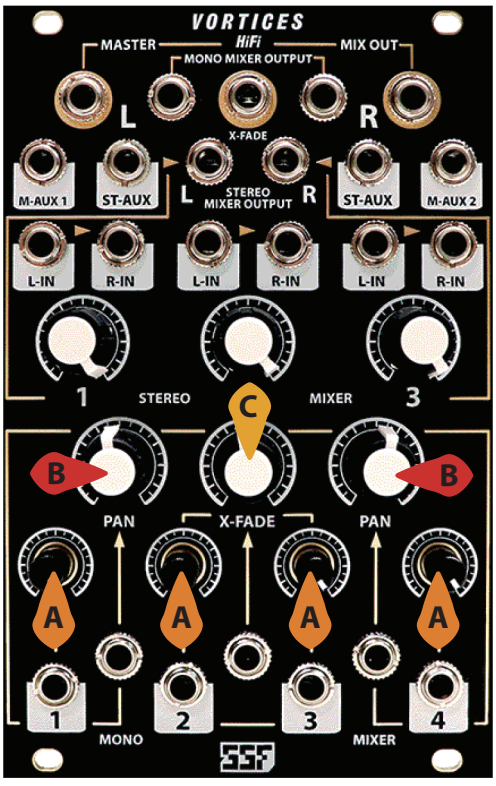


Mono Mixer: Controls

A — *Attenuation*

B — *Channel 1 & 4 Pan Controls*
Golden Arrows pointing from Pan CV Inputs

C — *Channel 2 & 3 X-FADE Control*
Golden Arrows pointing from Fade CV Input



STEREO MIXER DETAIL

AUDIO INPUTS

The Stereo Mix bus features 3 main (L>R normalized) stereo input channels with attenuation.

A single split stereo (L>R normalized) unity gain auxiliary input, located on each respective side of the STEREO MIXER OUTPUT jacks is also provided on the Stereo bus to accommodate direct stereo or monophonic sources. Separate mono sources may be used if you would like them to sit directly on the left or right side of the mix. Patching a single mono source into the Left (L) ST-AUX, while the Right (R) ST-AUX is unoccupied will normal the signal to both sides of the stereo mix.

AUDIO OUTPUTS

The STEREO MIXER OUTPUT is located above STEREO channel 2's inputs.

MASTER MIX

The MASTER MIX OUT offers the sum of every audio input on Vortices. Split stereo output are located at the far left and right on the top row. A copy of this signal is also available via a stereo jack on the back of the module. This can be routed to modules that also utilize a similar rear-facing stereo input.

QUICK-VIEW: Stereo Mix Bus

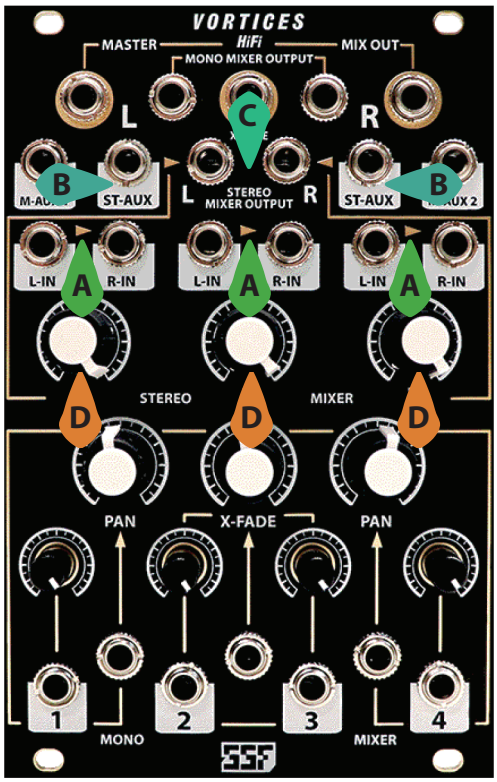
Stereo Mixer: Audio IN/OUT and Controls

A — *Main Stereophonic Inputs 1, 2 , 3 (Left to Right Input Normalization)*

B — *Auxiliary Split Stereo Inputs L & R*

C — *Split Stereo (L/R) Direct Output of the STEREO MIXER Bus*

D — *Attenuation*



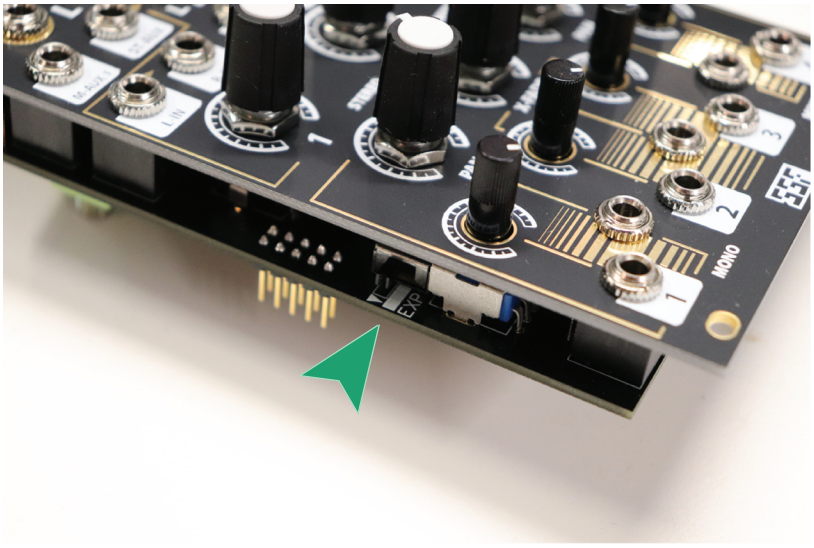
V-CV EXPANDER

Vortices HiFi CV expander adds voltage control of the signal levels for the 3 stereo and 4 mono main inputs.

★ The switch located near the expansion header, between the panel and PCB must be set in the EXP position when the expander is connected.

The supplied 10pin cable must be connected in the same orientation on Vortices HiFi and V-CV. Red stripe down.

With V-CV connected the functioning of Vortices HiFi remains the same. Once a Control signal is patched, the respective channel attenuator adjusts the level of the incoming CV, allowing level and saturation to be automated. The CV source should be near 10V for full scale behavior.

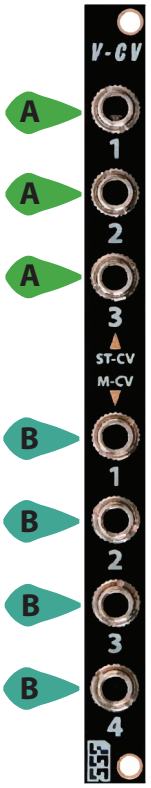


Original Vortices Shown Above - switch location is the same on HiFi

QUICK-VIEW: V-CV Expander

A *Stereo Mixer CV Inputs*

B *Mono Mixer CV Inputs*



Technical

Vortices:

Power Consumption: +110mA, -105mA

Width: 16hp

Depth: 26mm

V-CV:

Power Consumption: +0mA, -0mA

Width: 2hp

Depth: 23mm