Eastside Manual

SV Modular

August, 2019

Eastside Users Manual

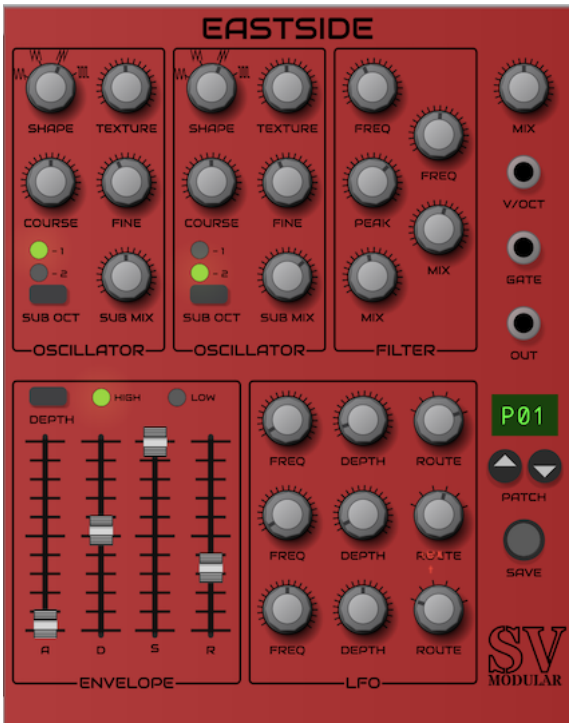

Figure 1: Eastside

Eastside is an East Coast style synthesizer, based on analog synthesizers originally designed and built on the East Coast of the United States. It provides two Voltage Controlled Oscillator modules, three Low Frequency Oscillators, two Filters, an Envelope generator, 16 presets, and 16 slots to save user patches.

Eastside provides for four voice polyphony, allowing you to use up to four voices from a single input.

Signal Path

Eastside has four distinct module sections:

- Voltage Controlled Oscillator (VCO)
- Low Frequency Oscillator (LFO)
- Voltage Controlled Filter (VCF)
- Envelope Generator (EG)

The LFO has the ability to affect parameters on the VCO and VCF. Input comes from and external source and is routed into the VCO. Output from the VCO is routed into the EG, and finally through the VCF.

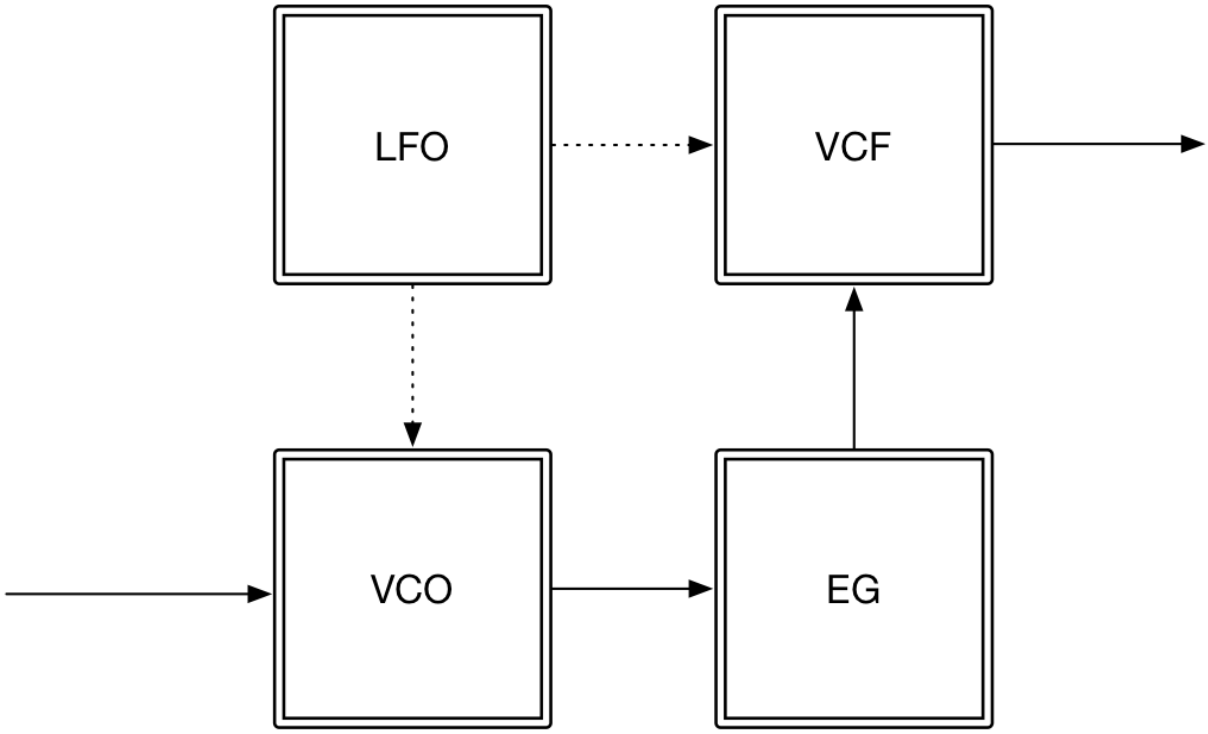

Figure 2: Signal Path

Panel Controls and Functions

Eastside is divided into discrete components each with specific functionality.

VCO (Voltage Controlled Oscillators)

Figure 3: VCO

Eastside contains two Voltage Controlled Oscillators, each coupled with a second sub-oscillator. This provides a total of four oscillators for sound creation, broken into two distinct modules.

Each oscillator module has six control settings.

Shape The shape parameter changes between four oscillation modes.

Sine Wave provides a smooth sounding tone, and is the fundamental building block of sound. A sine wave provides a single frequency with no harmonics.

Triangle Wave provides two sloping sides with a sharp peak. Triangle waves provide a sharper sound with harmonics at the inverse square of its harmonic number. This means that a triangle wave at 100Hz would provide harmonics at 300Hz with an amplitude of 1/3^2 (0.1111), 500Hz, 700Hz, etc.

Sawtooth Wave provides a sharp ramp followed by an immediate drop. This is characterized by a more *brassy* sound. The harmonics are equal to the inverse of its harmonic number, meaning that a 100Hz tone will be accompanied by a 200Hz tone at 1/2 the amplitude, a 300Hz tone at 1/3 the amplitude, etc.

Square Wave provides an oscillation of on and off, at equal intervals. These give a warm sound, but not as clean as a sine wave. Square waves provide odd harmonics at the inverse of its harmonic number.

Thus, a 100Hz square wave will provide a 300Hz harmonic at 1/3 the amplitude, 500Hz at 1/5 the amplitude, etc.

You can choose between these four shapes, which control both the primary oscillator and the sub-oscillator.

Texture Each primary oscillator is the combination of two oscillators, a clean generated wave and a rougher, more analog wave. The *Texture* parameter allows you to choose either one or a blend of the two.

Coarse The *Coarse* parameter provides a coarse tuning of the oscillator. It provides adjustment from one octave below to one octave above the base frequency fed into the oscillator itself.

Fine The *Fine* parameter allows for an adjustment of -1/10 of an octave to +1/10 of an octave.

Sub Oct The *Sub Oct* button controls the number of octaves the sub-oscillator is tuned below the primary oscillator. This can be either one octave below (-1) or two octave below (-2) the primary frequency of the oscillator.

Sub Mix The *Sub Mix* parameter controls how much of the sub-oscillator is mixed into the primary oscillator. This can be a mix of 0% through 100%.

LFO (Low Frequency Oscillators)

Figure 4: LFO

There are three Low Frequency Oscillators that can affect different aspects of the sound, ranging from altering portions of the VCO or altering portions of the VCF. These LFOs are bipolar, meaning that they cycle between `-1v` and `1v`.

The waveform that the LFOs uses for Eastside is always a Sine wave, meaning that any affects will be via a smooth curve.

Frequency The *Frequency* or *Freq* parameter allows you to adjust the frequency of the LFO from `0.001Hz` to `30Hz`, or really slow, and 30 times per second.

Depth The *Depth* parameter acts as an attenuator to the LFO, changing the rise and fall voltages. These voltages will vary from 0% to 100% of the full voltage, depending on the position of the knob, where 0% is when the knob is fully to the left, and 100% when the knob is fully to the right.

Route Each LFO has the ability to be routed to a VCO or VCF.

The *Route* parameter routes the output of each LFO into one of five different functions, with the sixth, or left-most, turning off routing for each LFO.

Position	Description
One	Routing Off
Two	Frequency Modulation, Oscillator 1
Three	Frequency Modulation, Oscillator 2
Four	Frequency Modulation, Filter 1
Five	Peak Modulation, Filter 1
Six	Frequency Modulation, Filter 2

VCF (Voltage Controlled Filters)

Figure 5: VCF

Eastside contains two Voltage Controlled Filters that alter the sound characteristics by performing subtractive synthesis.

Low Pass Filter The first filter in the filter bank is a Low Pass Filter consisting of a virtual ladder filter. This filter has a unique sound similar to a Moog ladder filter.

The *Frequency* or *Freq* parameter adjusts the frequency at which the low pass filter cuts at. This frequency is adjustable from `20Hz` to `6000Hz`.

The *Peak* parameter controls the amount of resonance that is fed back into the filter. This ranges from `0` to `100` percent, with `0` being fully to the left, and `100` being fully to the right.

The *Mix* parameter controls the dryness and wetness of the filter. It adjusts from `0` to `100` percent, where `0` is fully to the left.

Comb Filter The Comb Filter introduces a small delay to the signal adding additional harmonics. This can be useful for adding *thickness* or *warmth* to a sound.

The *Frequency* or *Freq* parameter controls the frequency response of the filter itself, and is adjustable from `20Hz` to `6000Hz`.

The *Mix* parameter controls the dryness and wetness of the filter. It adjusts from `0` to `100` percent, where `0` is fully to the left.

EG (Envelope Generator)

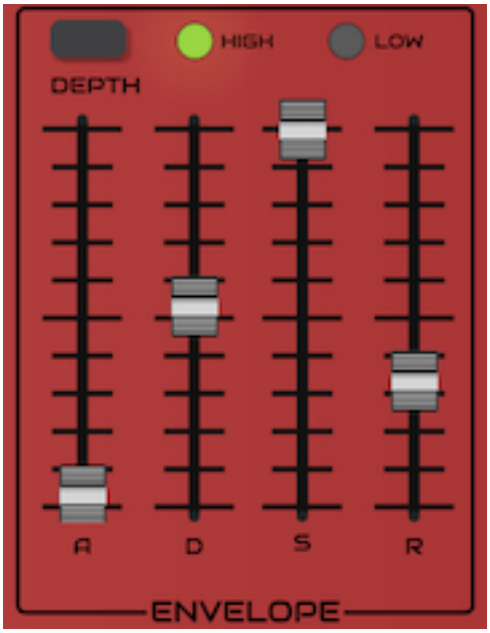

Figure 6: EG

Eastside incorporates an ADSR Envelope Generator, featuring an Attack, Decay, Sustain, and Release. This envelope alters the characteristics of the sound by allowing for a timed note release, based on the parameters and the length of the *Gate* input.

Depth The *Depth* parameter is used to determine the scale of the Envelope Generator. A *High* depth is a longer timeframe than a *Low* depth by a factor of 2.

Attack The *Attack* parameter controls how quickly the sound is brought to full volume. When *Depth* is *High*, this is between `0` and `10` seconds. When *Depth* is *Low*, this is between `0` and `2.5` seconds.

Decay The *Decay* parameter controls how quickly the volume of the sound falls after the *Gate* is released. This is between `0` and `10` seconds when *Depth* is *High*, and `0` and `5` seconds when *Depth* is *Low*.

Sustain The *Sustain* parameter controls the overall volume when the *Gate* is held open. It ranges from `0` to `100` percent, regardless of the *Depth*.

Release The *Release* parameter controls how rapidly the volume decreases to `0` when the *Gate* is released. When the *Depth* is *High*, this is `0` to `10` seconds. When *Low*, `0` to `5` seconds.

Patches

Figure 7: Patches

Eastside provides a mechanism to save *User Patches*. There are sixteen slots to save these user patches: `U01` through `U16`, along with sixteen preset patches: `P01` through `P16`.

You can navigate through patches by using the *Up* and *Down* arrows. Patches starting with P are *Preset* patches, read-only, provided to you. Patches starting with U are user patches that you have access to save to and overwrite.

Writing a Patch Writing to a patch is easy to do. You can write a currently set up patch to a *User Patch* by pressing the *Save* button and navigating to the *Patch* that you wish to save to. After the first press, the *Save* button will turn *Yellow* while waiting for you to complete the save. You can then navigate to a new *User Patch* using the *Up* and *Down* arrows - note that this will not change the current patch itself while in *Save* mode. When you have navigated to the slot that you wish to save the patch, press the *Save* button once more. The save button will change to the color *Green* on success of the patch being written, or *Red* if there is an error. Typically, the button will only turn *Red* if you are attempting to overwrite a preset patch.

Note that these presets are global, and will be the same no matter the number of copies of Eastside that you have running locally on that computer.

Presets

Eastside contains sixteen presets that are designed to present great starting points for you to either use directly or to modify and save as your own patches.

Preset	Name
P01	Growing Pad
P02	Deep Pad
P03	Rez Pad
P04	Flighty Bass
P05	Harmonica
P06	Electric Strings
P07	Wah Lead
P08	Electric Piano
P09	Church Organ
P10	Harpsichord
P11	Bellowtron
P12	Underwater
P13	In Search of the Id
P14	Tea Cups
P15	Dreams of a Clock Tower

Preset	Name
P16	Dark Woods