

MORNINGSTAR



USER GUIDE 1.0

Main Features



- 3 oscillators with Saw|Square|Triangle|Sine|Self Osc Mode and 1 Noise oscillator
- PWM (Pulse-Width Modulation) modes for each wave
- Unique Filter Module: State Variable, combined with a multi-mode Ladder filter
- Separate Amp Envelopes for each oscillator that can be locked to Amp Env 1
- Analog style Mono and Legato modes and up to 10 voices polyphony
- 2 LFOs with delay and inter modulation capabilities
- 3 Modulation envelopes with curve and velocity controls
- Modulation Matrix with access to even more controls for advanced sound design
- Two-Mode Chorus, Tape, Delay, Reverb and Analog Pitch effects
- 4 CV inputs. Available as modulation source in the Matrix

Oscillator Module x 3



Osc Controls

Waveform Select	Sawtooth Square Triangle Sine Self Oscillator
Octave	Sets the Octave in the range of 5 octaves
Tune	Sets the fine tune following an exponential curve
Pan	Sets the Panning of the Oscillator
PWM	Sets the Pulse-Width of the Oscillator

Modulation Menu

Tune	Sets LFO 1 to modulate the Tune/Pitch of the Oscillator
PWM	Sets LFO 1 to modulate the Pulse-Width of the waveform
Pan	Sets LFO 1 to modulate the Panning of the Oscillator

Additional Details

The Matrix section allows for deeper editing of the sound for each oscillator such as individual Filter settings and more. If *Self Oscillator* is selected as a waveform, turn up the resonance on one of the filters to play the resonance, use the frequency knob to tune the sound.

Mixer



Mixer Controls

Osc 1 Level	Oscillator 1 Level control
Osc 2 Level	Oscillator 2 Level control
Osc 3 Level	Oscillator 3 Level control
Noise Osc Level	Noise Oscillator Level control

Noise Oscillator

The Noise Oscillator generates a white-noise with a High Pass filter to remove unwanted low frequencies. This Oscillator does not have its own control section like the other oscillators, but can be further edited or modulated via the Matrix.

Filter



Filter Controls

Modulation Menu	Modulation input for both the SVF and Ladder Filter
Modulation Amount	Modulation Amount for the Filters
State Variable Filter (SVF)	State Variable Filter On / Off
Filter Drive (Sine / Tanh)	Filter Drive On / Off (chain: SVF -> Drive -> Ladder)
Filter Mode (Ladder)	HP12 / BP6 / LP6 / LP12 / LP18 / LP24
Filter Frequency (Ladder + SVF)	Ladder Filter Frequency
Filter Resonance (Ladder + SVF)	Ladder Filter Resonance
Filter Keytrack (Ladder + SVF)	Ladder and State Variable Filter Keytracking

The Filters

The Filter section audio flow: Filter Input -> State Variable Filter -> Drive -> Ladder Filter. The State Variable Filter can be further edited via the Matrix with individual settings for Frequency, Resonance and High-Low (Fade between lowpass and highpass). The Filter Input Gain and Drive amount can also be modulated, this results in a unique sounding filter with optional deeper editing capabilities.

LFOs (Low Frequency Oscillators)



LFO 1 & 2 Controls

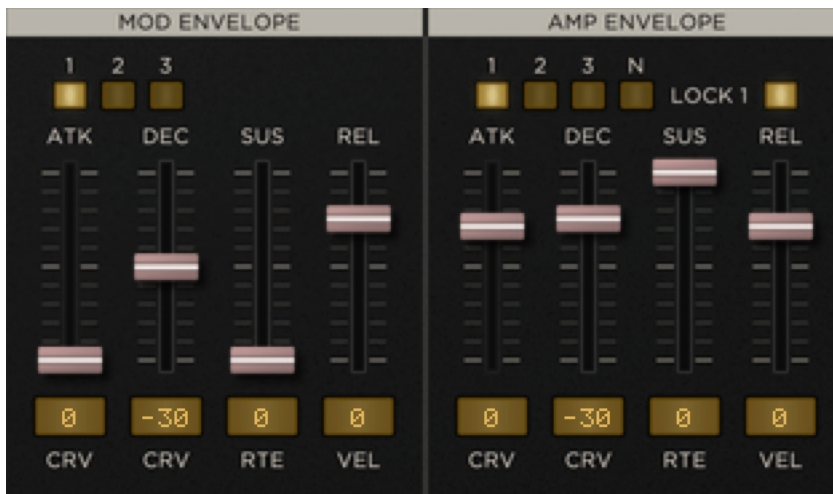
Waveform	Waveform type for the LFO
Retrig	Restarts the LFO at the current set Phase position
Rate	Rate of the LFO cycle in Hz or synced to BPM
Delay	Delays the effect of the LFO modulation per key
Sync	Sets the Rate of the LFO to sync to BPM
Phase	Start position of the LFO (Waveform)
Unipolar	Sets the polarity of the LFO [0 to 1] vs [-1 to 1]
Mod	Center position = 0 Turn left to for LFO 2 to modulate the rate of LFO 1 Turn right for LFO 1 to modulate the rate of LFO 2

The LFOs

LFO 1 is hardwired to optionally modulate the oscillators Tune / Pan / PWM controls. The amount is set on each Oscillator. Further, the Mod knob between LFO 1 and 2 can add an additional layer to the behavior of the rate of either LFO 1 or LFO 2.

As an example, with the Mod knob turned to the left, LFO 2 modulates the rate of LFO 1, then with the use of the Delay control of LFO 2, the effect of the modulation of LFO 1 increases with time. This is useful for building evolving sounds that change over time.

Mod and Amp Envelopes



Mod Controls

1/2/3	Selects the Envelope to edit
ATK DEC SUS REL	Controls the Attack, Decay, Sustain and Release
CRV (1)	Sets the curve of the Attack
CRV (2)	Sets the curve of the Decay
RTE	Sets the rate/speed of the envelope sequence
VEL	Sets the Velocity amount

Amp Controls

1/2/3/N	Selects the Envelope to edit: Osc 1/2/3 or Noise
Lock 1	Locks all Amp Envelopes to Env 1
ATK DEC SUS REL	Controls the Attack, Decay, Sustain and Release
CRV (1)	Sets the curve of the Attack
CRV (2)	Sets the curve of the Decay
RTE	Sets the rate/speed of the envelope sequence
VEL	Sets the Velocity amount

The Envelopes

The Envelopes are simple yet flexible. You can control the amp of the entire synthesizer just as any other via Amp Envelope 1, however when Lock 1 is turned off, you gain control over each oscillators individual Envelope curve. This allows for individual Attack, Decay, Sustain and Release for each oscillator.

Effects



Effect Controls

Chorus	Two Chorus modes. Turn left for a dual chorus stereo mode, right for a single chorus mode
Rate / Tape	Controls the rate and amount of a tape style drift effect
Delay	Sets the delay amount. Rate is fixed at 3/16 pingpong
Mod / Reverb	Sets the reverb amount, mod adds tune drift to the reverb
Analog	Analog style randomized per note tuning.

The Effects

The effects in Morningstar adds an additional layer to your favorite patches. Use the Tape and Analog knob to bring out subtle (or extreme) analog synth style drift, or try out either of the chorus modes to set it perfectly in your mix.

Voice



Voice Controls

Transpose	Transpose the instrument between -12 semi and +12 semi
Polyphony	Switch between Mono / Legato / 4 / 8 / 10 voices
Glide	Sets the Glide amount for all Poly modes

Polyphony and Glide

With Polyphony set to Mono the envelopes and LFOs gets re-triggered with each played note, this in contrast to Legato mode where the envelope curves and LFOs follow trough smoothly until the last held note is released. Similarly, Glide in Legato mode is only audible when playing overlapping notes, but is audible for every new note played in mono mode.