Ocean Swift Synthesis - Formula X

A hybrid technology synthesizer featuring additive, wavetable, fm and subtractive synthesis elements featuring a unique signal flow with a-symmetric oscillator and filter sections, extensive modulations and powerful built in effects.

Controls

Osc 1

Harmonics 1-8: Volume for eight sine partials tuned to the fundamental and the first seven harmonics.
Dissonance 1-8: Volume for eight sine partials tuned to a multiplication of the fundamental.
Dissonance Multiplier 1-8: Multiplier for setting the relationship of each dissonance partial to the fundamental.
Tone Mix: Crossfade mix between the harmonics section and the dissonance section.

Comb Bypass: Turns on or off the routing of the osc through a comb filter.The cutoff point is set internally and is based on the pitch of the osc.
Redux Bypass: Turns on or off the routing of the osc through a sample rate reduction effect.
Redux: The amount of sample rate reduction applied to the osc. At the right position no modulation is applied, at the left position maximum reduction is applied.
Coarse: Coarse tuning of the osc.
Fine: Fine tuning of the osc.
Env: Modulation depth applied to the osc pitch via the pitch envelope.
LFO: Modulation depth applied to the osc pitch via the pitch lfo.
Detune: Detune amount of the osc when more than one voice is set in the main controls with the uni knob.

Osc 2

Wav: Waveshape selection from a list of wavetables.
Crisp: Adds a bright quality to the wave.
Comb Bypass: Turns on or off the routing of the osc through a comb filter.The cutoff point is set internally and is based on the pitch of the osc.
Redux Bypass: Turns on or off the routing of the osc through a sample rate reduction effect.
Redux: The amount of sample rate reduction applied to the osc. At the right position no modulation is applied, at the left position maximum reduction is applied.
Coarse: Coarse tuning of the osc.
Fine: Fine tuning of the osc.
Env: Modulation depth applied to the osc pitch via the pitch envelope.
LFO: Modulation depth applied to the osc pitch via the pitch lfo.
Detune: Detune amount of the osc when more than one voice is set in the main controls with the uni knob.
AT: Bipolar aftertouch control for the pitch of osc 2. At the center position no modulation is applied.
PW Mix: Crossfade mix between the osc 2 wavetable and a pulse shape.
PW: Controls the shape of the pulse. At the center position the shape is a square.
Sub: Controls whether the pulse shape is in tune with the osc 2 wavetable or an octave below it.
PWM: Depth of pulse width modulation of the pulse shape.
Rate: Rate of pulse width modulation of the pulse shape.

Pitch Envelope

Envelope: Attack and decay controls.
Slp: Slope control for the decay and release controls.
Vel: Bipolar velocity control over the overall level of the envelope. Center position indicates no modulation.

Pitch LFO

Wave: The waveform of the LFO. The wave is a choice between a sine, square, saw up, saw down, triangle, and random - 6 shapes in total.
Rate: The speed of the lfo when not in sync mode. From 0.01 to 400hz.
Div: The speed of the lfo when in sync mode. Measure divisions based on the device's BPM setting. Provided are 19 divisions: 64bar, 32bar, 16bar, 8bar, 4bar, 2bar, 1bar, 1/2p, 1/2, 1/2t, 1/4p, 1/4. 1/4t, 1/8p, 1/8, 1/8t, 1/16p, 1/16, 1/32.
Phase: The starting phase of the lfo. Noticeable when the LFO is in retrigger mode.
Sync: Turns sync mode on and off.
Retrig: Retriggers the osc to start at the point specified by the phase knob with each new midi gate.

Drone Mode

Note: When turned off the device responds to midi note messages and uses them as the base pitch of the device. When turned on the device does not respond to midi notes but instead uses the value set in the note select knob as the base pitch of the device.
Amp: When turned on the device bypasses the amp section and is always outputting sound.
Note Select: The base note used for the pitch of the device when note mode is turned on.

Mix Section

Osc Mix: Crossfade mix between osc 1 and osc 2.
Ring: Crossfade between the osc mix and a ring modulation circuit.
Ring Ext: Determines the ring modulation circuit as either modulation between osc 1 and 2 or modulation between both oscs together and the device’s ring input.
Ext: Crossfade mix between the oscs and the external input.

Amp

ADSR Envelope: Envelope with controls for attack, decay, sustain and release.
Slp: Slope control for the decay and release controls.
Vel: Bipolar velocity control over the overall level of the envelope. Center position indicates no modulation.

FM Section

FM Amount: Amount of frequency modulation applied to osc 1.
Env: Determines whether the FM signal is applied directly to osc 1 or first passed through the pitch envelope.
Sharp: Changes the behavior of the fm circuit.

Ext: When turned off osc1 is modulated by a dedicated sine lfo shape that is derived from the settings of osc2. When turned on osc1 is modulated by the device's fm input.
Retrig: Option for midi gate retriggering of the fm carrier signal when the fm is in internal mode.
Sync: Sets the retrigger mode for osc1. When set to off the osc is in free running mode, when set to gate the osc retriggers on each new midi gate signal and when set to sync osc 1 is synced to osc 2 and will retrigger on each new cycle of osc 2.

Filters

Filter Type: Choice of filter type. Filter 1 offers the choice of 25 filter types of all kinds while filter 2 offers the choice of 3 flavors of a 24db low pass filter.
Cutoff: The cutoff point of the filter.
Reso: The resonating quality of the filter.
Env: Depth of modulation applied to the filter by its dedicated envelope.
LFO: Depth of modulation applied to the filter by its dedicated LFO.
Drive: Mild distortion on the output of the filter.
KBT: Bipolar midi note tracking modulation of the filters. At the center position no modulation is applied. Even when drone mode is set to note, the filters will still respond to midi notes.
AT: Bipolar aftertouch control of the filter cutoff. At the center position no modulation is applied.
Filter Envelope: Dedicated envelope for the filter's cutoff with attack, decay, sustain and release controls.
Slp: Slope control for the decay and release controls of the envelope.
Vel: Bipolar velocity control over the overall level of the envelope. Center position indicates no modulation.
Filter LFO: Dedicated LFO for the filter's cutoff with the same controls as the pitch LFO.

Main Controls

Main Out: Overall volume of the device. This parameter is not stored with presets.
Tune: Overall tuning of the device.
Uni: Number of voices allocated to the unison circuit. Works in conjunction with the voices set for the device in the Scope live bar. Each voice allocated to unison uses one additional voice. A value of 1 indicates no unison and normal polyphonic voice behavior.
Midi: The midi channel for the device. This parameter is not stored with presets.
BPM: The BPM of the device from which all dividers calculate thier values.
Bend 1: Pitch bend wheel range for osc 1. From one semitone to two octaves.
Bend 2: Pitch bend wheel range for osc 2. From one semitone to two octaves.
Port 1: Turns on or off portamento for osc 1.
Port 2: Turns on or off portamento for osc 2.
Port Time: Pitch glide time for both osc's portamento circuit.

Effects

EQ: Bipolar tone shelving EQ with controls for low and high frequencies.
Tremolo: Tremolo effect with a dedicated syncable LFO.
Phaser: Phaser with controls for depth, rate, feedback, wet amount and effect bypass.
Chorus: Stereo chorus with controls for depth, rate, feedback, phase, flange mode, wet amount and effect bypass.
Delay: Stereo Delay with controls for left and right time, feedback amount, feedback damping, cross modulation, bpm sync, wet amount and effect bypass.

Credits

Circuit Design: Yaron Eshkar
Gui Design: Fernando Abreu

Web

http://www.oceanswift.net
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