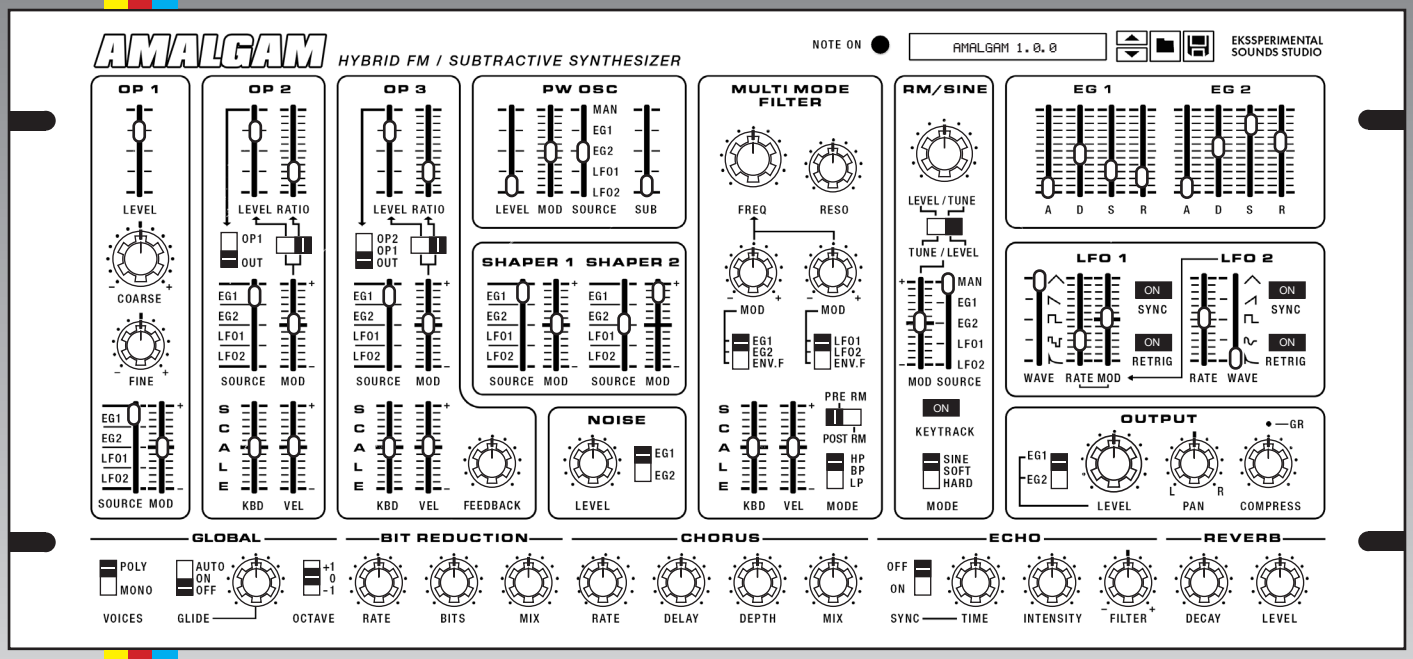
AMALGAM

HYBRID FM / SUBTRACTIVE SYNTHESIZER



Quick Guide

TIP! *To achieve finer control over knobs and sliders in Reason, hold SHIFT while dragging. Also check Preferences so that Mouse Knob Range is set to "Very Precise"*

OP 1-3 (FM Operators)
These FM operators can be used as three separate oscillators, carriers or modulators. The roles are defined by the routing; OP2 and OP3 can be routed either to the output or the previous OP(s).

OP2 and 3 are relative to OP1, meaning the tuning of OP1 will affect the frequency of all operators. Their frequency can be offset by set ratios (stepped) from 0.25:1 to 25:1 or freely from 1-250% (equal to 100:1 to 2,5:1). Since the free %-mode is limited to a smaller range it is easier to find interesting harmonies. Since it's extremely difficult to hit the exact right value with the slider the stepped mode makes it easier to find values that are useful for sound design.

A ratio of 0.50 produces a pitch one octave lower, and a ratio of 2.00 produces a pitch one octave higher, and so on. The fractional ratios – 1.73, for example – produce complex waveforms when combined with operators set to other ratios.

Apply modulation to the OPs using the SOURCE, MOD, KBD and VEL sliders. The LFOs and envelopes are unipolar and can be added as positive or negative modulation. The KBD and VEL are bipolar will scale the target value; KBD will raise the value of higher keys and lower the value of lower keys, VEL will scale the value to the velocity so that higher velocity values raise the level and weaker velocity values will lower the level. Negative modulation will invert the behavior.
OP3 can be fed back its own signal with the Feedback knob.

On the backside you'll find settings for stepped tuning (set ratios, stepped coarse tune knob) and waveshape settings. Each OP can morph from Sine to Pulse to Saw by 20% step increments between the shapes. Note that aliasing can occur when using other shapes than SINE, and that Pulse and Saw do not perform very well under ratio's of 0.25:1 So, for smooth modulation on these slower rates SINE is recommended!

PW OSC (Pulse width oscillator)
Set the level of the pulse with the LEVEL fader, adjust the pulse width with the MOD and SOURCE. The pulse width can be adjusted from 5-50% manually (MAN) or via the envelopes or LFOs. The SUB fader adds a pulse oscillator 1 octave lower.

SHAPER 1 & 2
Two waveshapers with different character, one is a simpler sine shape and the second is multiple sine waves. Use the waveshapers to alter the shape of the waveform, to produce more complex and extra-abrasive sounds. The amount is applied with the MOD sliders and the value is determined by the modulator set with the SOURCE slider.

NOISE
A simple white noise generator, the level can be controlled with either EG1 or EG2.

Multi Mode Filter
The filter can be set to Low Pass (3 poles) Band Pass (1 pole) or High Pass (2 poles). The frequency cutoff can be set from 20-20kHz. The resonance will self oscillate when turned up and tracks to the keyboard if KBD is set to full positive.

Apply modulation from LFOs and envelopes using the MOD knobs. The LFOs and envelopes are unipolar and can be added as positive or negative modulation.
Control the scaling across the keyboard and velocity range using KBD and VEL sliders.

RM / SINE
Ring Modulator and Sine Oscillator. Either LEVEL or TUNE can be modulated with the envelopes and LFOs. The TUNE/LEVEL switch will decide if the LEVEL/TUNE knob or the mod sliders are controlling the tuning or the level of effect. Keytrack will toggle keyboard tracking on or off and MODE decides the basic operation; Sine Oscillator, Soft sync ring mod or hard sync ring mod.

Envelopes
Standard ADSR (Attack Time, Decay Time, Sustain Level and Release Time)

LFOs
Two Low Frequency Oscillators with Retrig and Sync options. LFO2 can modulate the rate of LFO1.

OUTPUT
Selector for EG1 and EG2, Level and Pan. The compressor will analyse the signal and adjust accordingly. This happens pre-effect section.

GLOBAL
Settings for Monophonic or Polyphonic mode. Glide Off/ON/Auto and time adjustment. (Auto = on overlapping notes)

BIT REDUCTION
Decrease RATE and BITs for a digital lofi sound. If only slighlty decreased it can be used for a light noisy hiss.

CHORUS
Classic chorus with settings for Rate, Delay Depth and Mix.

ECHO
Simple echo with syncing possibility.

REVERB
Reverberation effect ranging from small room to large atmospheric sound.

EXTERNAL INPUT
The external audio input is routed through the compressor and effects.

EKSSPERIMENTAL SOUNDS STUDIO

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