



INTRODUCTION

Thank you for choosing Ekssperimental Sounds ES101 Analog Synthesizer.

The ES101 incorporates advanced synthesizer technology and features developed for the Reason rack environment with the added convenience and versatility of CV controll of parameters via input jacks on the back panel.

We urge you to read this user guide thoroughly in order to make the most of your ES101 Analog Synthesizer.

BASIC SETTINGS

VOLUME

This control serves the dual function of volume control and note indicator. Rotate clockwise to increase Volume. The LED will flash when ES101 receives notes via CV Gate or MIDI.

VOICES (Back panel)

The ES01 can either be played in Polyphonic mode (16 voices) or in monophonic mode (1 voice)

VEL SENS (Back panel)

Modulate output volume by the velocity of played notes

GLIDE (Back panel)

Creates a glissando between notes played. Can be set to OFF, ON or AUTO. In AUTO mode the glide only happens when two notes overlap, i.e when played Legato. Time trimmer is used to set desired glide time.

Important!

Each triggered note will remember it's modulation source until release. When using MOD SRC selectors the change is noticed on the first new note after source has been set.

LFO 1 & 2

LFO stands for Low Frequency Oscillator and can be used for tremolo, vibrato, sweeps, repetitive or randomizing effects.

WAVE

Select one of 6 waveforms for each low frequency oscillator.

SPEED

Set the speed from S (slow) to F (fast). Speed can be modulated via CV input on the back panel.

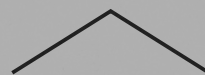
RETRIG (Back panel)

Retrig the LFO for each new note.

SYNC (Back panel)

Sync the LFO speed to BPM

WAVEFORMS LFO 1



Triangle



Saw Down



Saw Up



Pulse

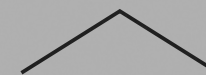


Random



Saw Exponential

WAVEFORMS LFO 2



Triangle



Saw Down



Saw Up



Pulse



Drift



Saw Exponential

VCO

The Voltage Controlled Oscillator is the basic sound generator of the ES101. The pitch of its signal is determined by the input of CV and MIDI message from your keyboard or sequencer.

LFO1 MOD

The LFO1 signal can be used to modulate the pitch of VCO and FM OSC with this fader.

FEET

This selector determines the ground range of the ES101 VCO and FM OSC.

PITCH

This is the ES01 tuning control. It permits a tuning of ± 50 cents so that you can match the pitch of

PULSE WIDTH

These two faders can be used to control the PULSE WIDTH. When set to MAN the pulse can be varied manually between 10% and 50% width. When set to the EG1, EG2, LFO1 or LFO2 positions the width

is controlled by the shape Envelope Generators or Low Frequency Oscillators.

This function varies the width of the pulse in each cycle determined by the speed set by the PWM SPEED control. This function can be used to create a variety of chorus-like effects and add organic feel to your tones.

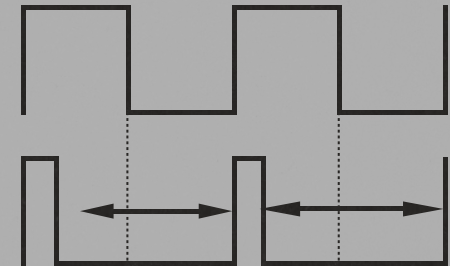
VCO MIXER

Mix the waveforms produced by the VCO, the sub oscillator signal and the noise generator signal.



50% Pulse Width

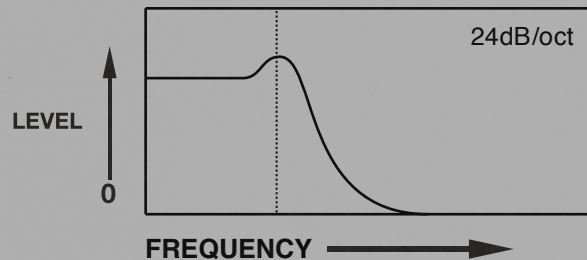
10% Pulse Width



Pulse Width Modulation

VCF 1 & 2

The Voltage Controlled Filters alters the sound by cutting off frequencies.



FREQ

Setting the VCF to the “H” end allows upper harmonics to pass, thereby creating a bright tonality. Moving the control towards the “L” end of the scale gradually cuts off more and more harmonics, creating a softer tonality.

RESO

Set to the “H” position frequencies near the filter cut off frequency are emphasized for a “sharper” sound. When set high the filter will self resonate (level will decreased as the input signal is increased).

MOD & SRC

Determines to what degree the signal of the EG or LFO affects the VCF cut off frequency. This permits creation of a broad range of interesting time-based tonal variation effects.

KBD (Back panel)

Control the cut off by following the signal of notes played.

VEL SENS (Back panel)

Control the cut off by following the velocity of notes played.

TRIMMERS (Small panel holes)

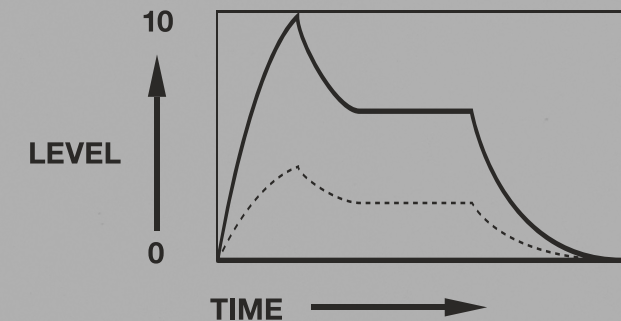
Fine tune the cut off frequency. This is convenient for fine tuning when using the VCF as an sine wave oscillator by self oscillation.

VCA

Voltage Controlled Amplifier

VCA LEVEL

This knob determines to what degree EG1, EG2 or LFO2 affects the level of the sound (dB). Chose which source to use with the 3 way selector below.



Envelope Generator affecting VCA

EG 1 & 2

The EG1 & EG2 blocks contains the ES101 envelope generator controls.

ATTACK TIME

This controls the time for the sound to reach maximum level when a note is played.

DECAY TIME

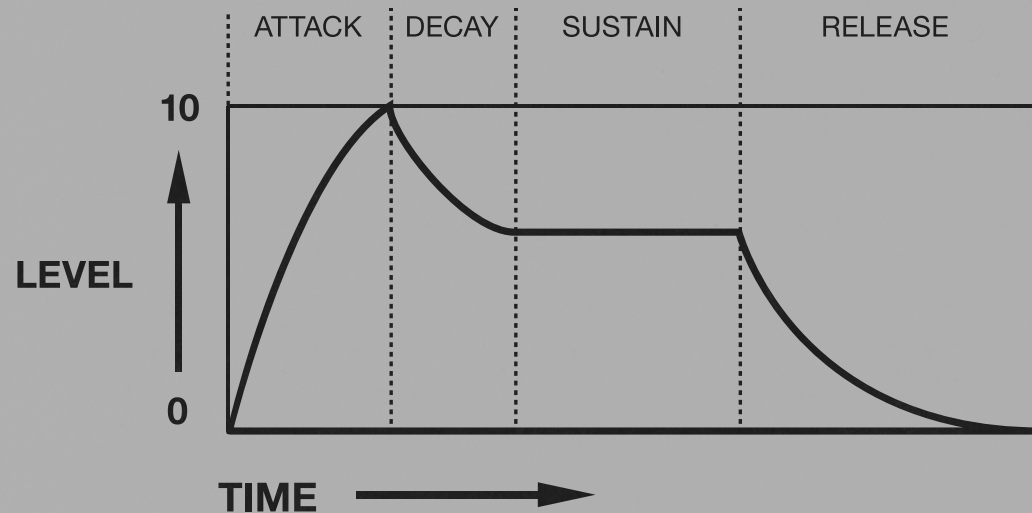
Controls how long it take for the sound the decrease to sustain after the maximum level has been reached. If the sustain control is set to maximum no decay effect will be noticeable.

SUSTAIN LEVEL

Determines the continuous level to be maintain after attack and decay have finished, as long as a note is played.

RELEASE TIME

The time it take for the sound to completely fade out after the note has been released.



FM OSCILLATOR

2 Operator frequency modulation oscillator

LEVEL

This fader controls the level of operator 1 and thus the overall level of the FM oscillator.

WAVE

This fader will shape the wave form of OP1 from Sine to Triangular.

OP2 RATIO

Controls the frequency of OP2. On the back panel you will find an offset trimmer for OP2 ratio.

OP2 LEVEL

The amount of modulation.

OP2 LEVEL SRC

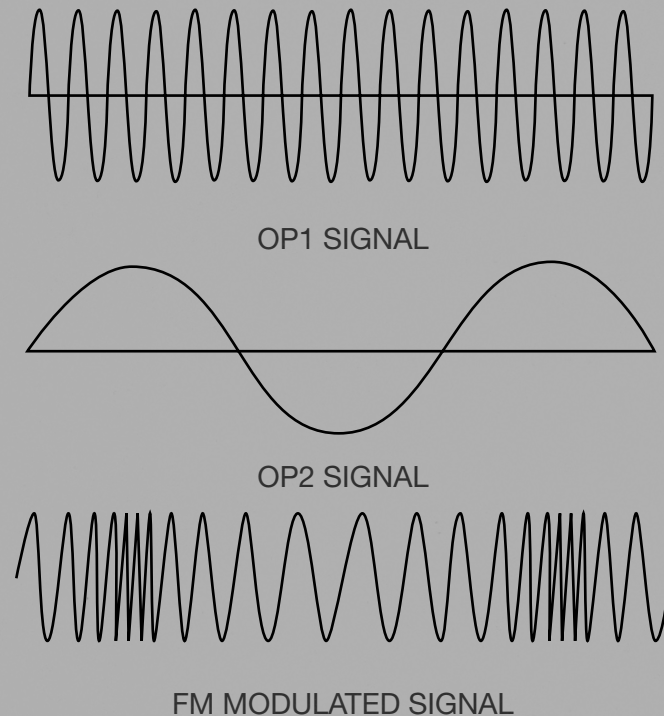
Scale the level manually (MAN) or by envelope generators or LFOs.

OP2 WAVE (Back panel)

Switch OP2 wave form from Sine to Triangular.

TRIMMER (Panel small hole)

Used to fine tune OP2 Ratio.



RM / SINE OSCILLATOR

Dual mode sine and ring modulation oscillator

LEVEL

This controls the level of sine wave or amount of ring modulation

LEVEL SRC

Scale the level manually (MAN) or by the envelope generators or LFOs.

TUNE

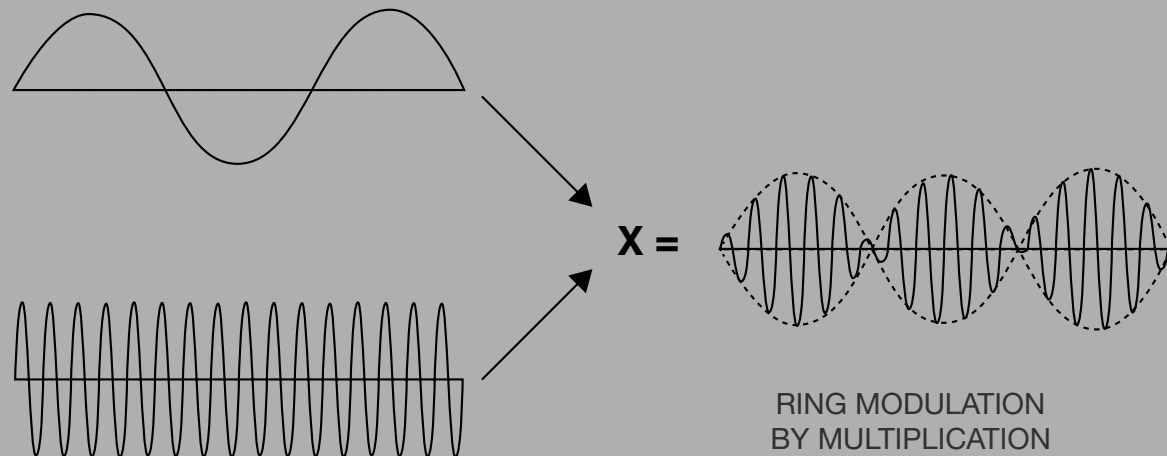
Control the pitch of the sine wave
On the back panel you will find an offset trimmer for tuning.

TUNE SRC

Scale the pitch manually (MAN) or by the envelope generators or LFOs.

MODES

Sine will generate a pure sine wave, soft will multiply the signal with the sine wave and hard will multiply by the polarity of the sine wave.



TRIMMER (Panel small hole)

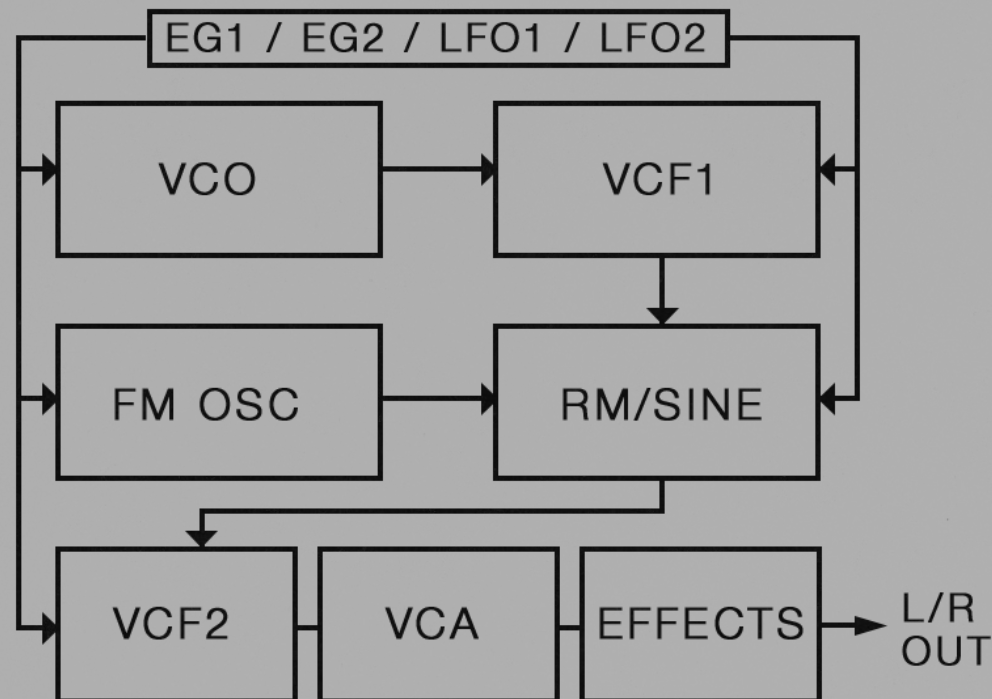
For extreme fine tuning on high frequencies. When TUNE is set low this trimmer will have an almost unnoticeable effect.

FREE/KBD (Back panel)

This oscillator is independent of the Feet selector but will follow the keyboard when set to KBD.

FLOW SCHEMATIC

Graphic representation of the signal flow scheme



CV INPUTS

The CV input jacks are directly connected to the parameter marked on the panel.

Using CV jacks allows for multiple modulations of one parameter. As an example you can use LFO1 to modulate VCF Cut off with the faders on the panel, and send EG signal via CV to the same parameter.

CV OUTPUTS

Notice that the EG CV Signal output is slightly smoother than the internal direct connections. For extra snappy and quick envelope modulation internal routing is advised.

EFFECTS

The ES101 has build in effects for easy sound design

HP

High pass filter to cut unwanted bass frequencies.

DRIVE

Create saturation and overtones with this fader.

CHORUS

Create width and richness by increasing the depth fader. Select from 2, 3 or 4 voices with the voices fader.

ECHO

Rate is the time relation between echos. FB controls the feedback amount, i.e how many repeats of the echo. Mix will fade from 0% to 100% echo.

On the back panel you will find a switch for echo SYNC mode and a dampening trimmer

REVERB

The Decay fader will control the length of the reverb from short to long.

Use the Mix fader to blend in the reverb, from 0% to 50% reverb. On the back panel you will find controls for tonality (Bright/Dark) and a low cut trimmer to easily cut away rumbling bass frequencies.



ES101

Concept and GUI by EKSSPERIMENTAL SOUNDS STUDIO
Created with IDT/GE Technology

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