LOAD + PLAY

MODEL PLAY

Basses that growl, leads that sing.



A virtual analog synth inspired by the Minimoog: three oscillators, a 24 dB ladder filter, plus polyphony, LFO, arpeggiator and effects.

USER MANUAL VERSION 1.0.0 FREE AND OPEN SOURCE

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1 Introduction

A free, open-source virtual analog synth inspired by the legendary Minimoog: three oscillators, a mixer that saturates, the 24 dB ladder filter and its two contour generators. Play it as is, or open up the extras: polyphony, LFO, arpeggiator, chorus, delay, MIDI learn.

Model Play faithfully follows the architecture and behaviour of the most famous monosynth: low-note priority, legato without retriggering, mixer saturation, ladder filter, bass loss at high resonance. Every extra is neutral by default: leave them alone and you hear the pure engine, verified sample for sample by the tests.

The sound

- **Oscillators**: 3 free-running oscillators (LO to 2'), 6 waveforms, anti-aliasing and 2x oversampling; osc 3 doubles as an LFO; adjustable analog drift.
- **Mixer**: 3 oscillators + white or pink noise, soft saturation when levels are pushed.
- **Filter**: 24 dB/octave ladder, saturation in each stage, resonance up to self-oscillation, optional bass compensation.
- **Contours**: two attack / decay / sustain generators, original DECAY switch or adjustable release.

The extras

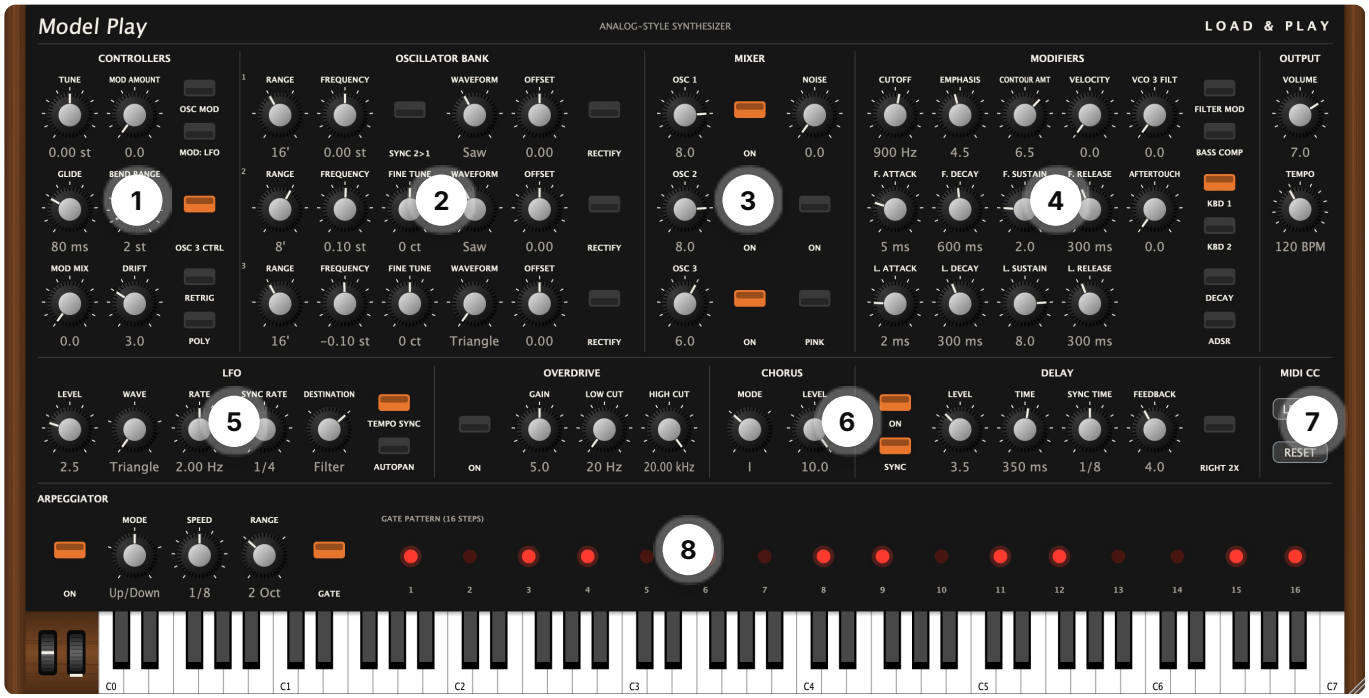
- **Playing**: mono or 8 voices, glide, retrigger, velocity and aftertouch to the filter.
- **LFO**: 5 shapes, free or tempo-synced rate, to the oscillators, filter or volume.
- **Arpeggiator**: 5 modes, 1 to 4 octaves, 16-step pattern.
- **Effects**: overdrive, BBD chorus, autopan, syncable stereo delay.
- **MIDI learn**: map any control to a knob on your controller. MIDI file player: drop a .mid onto the window.

2 Installation

- **macOS**: copy `Model Play.component`, `.vst3`, `.clap`, `.lv2` into `~/Library/Audio/Plug-Ins/` (Components, VST3, CLAP, LV2 folders) and drag `Model Play.app` to Applications. The software is not signed with Apple: on first launch, right-click → Open.
- **Windows**: copy `Model Play.vst3` to `C:\Program Files\Common Files\VST3` and `Model Play.clap` to `C:\Program Files\Common Files\CLAP`. If SmartScreen shows up: More info → Run anyway.
- **Linux**: copy the plugins to `~/.vst3`, `~/.clap` and `~/.lv2`.

Then restart your music software: Model Play shows up under "Load & Play".

3 The interface



At the top, the Minimoog as it was: controllers, oscillators, mixer, filter and contours. Below, the additions: LFO, effects, MIDI learn and arpeggiator. All neutral by default.

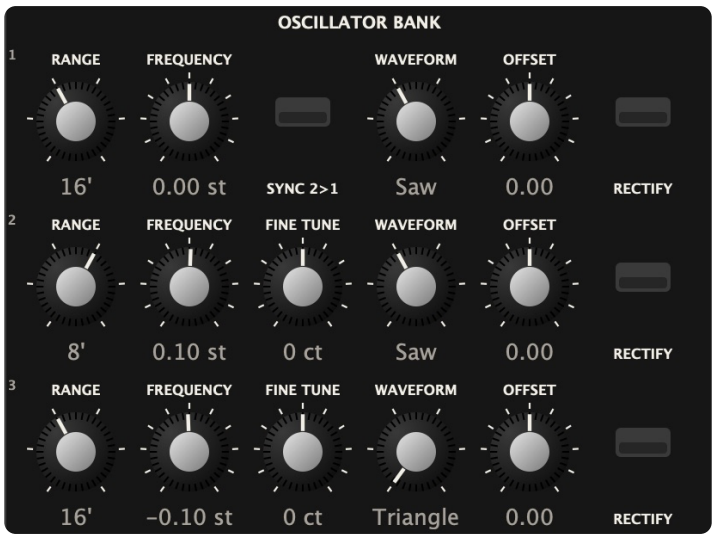
1 Controllers



Tune, glide, modulation mix and amount, analog drift. POLY switches the synth from mono (low-note priority, legato) to 8 voices.

CONTROL (AUTOMATION)	RANGE	DEFAULT
Tune	-1.00 st … 1.00 st	0.00 st
Glide	0 ms … 5.00 s	0 ms
Modulation Mix	0.0 … 10.0	0.0
Modulation Amount	0.0 … 10.0	0.0
Modulation from LFO	Off / On	Off
Oscillator Modulation	Off / On	Off
Filter Modulation	Off / On	Off
Pitch Bend Range	1 st … 12 st	2 st
Analog Drift	0.0 … 10.0	3.0
Retrigger	Off / On	Off
Polyphonic	Off / On	Off
Aftertouch Amount	0.0 … 10.0	0.0
Velocity to Filter	0.0 … 10.0	0.0
Tempo (without host)	40 BPM … 240 BPM	120 BPM

2 Oscillators



Three free-running oscillators from LO to 2', six waveforms, anti-aliasing and 2x oversampling. Osc 3 can leave the keyboard and become a modulation source.

CONTROL (AUTOMATION)	RANGE	DEFAULT
Osc 1 Range	LO / 32' / 16' / 8' / 4' / 2'	8'
Osc 1 Waveform	Triangle / Tri-Saw / Saw / Square / Wide Pulse / Narrow Pulse	Saw
Osc 1 Frequency	-7.00 st ... 7.00 st	0.00 st
Osc 1 Rectify	Off / On	Off
Osc 1 Offset	-1.00 ... 1.00	0.00
Osc 2 Range	LO / 32' / 16' / 8' / 4' / 2'	8'
Osc 2 Frequency	-7.00 st ... 7.00 st	0.10 st
Osc 2 Waveform	Triangle / Tri-Saw / Saw / Square / Wide Pulse / Narrow Pulse	Saw
Osc 2 Fine Tune	-50 ct ... 50 ct	0 ct
Osc 2 Rectify	Off / On	Off
Osc 2 Offset	-1.00 ... 1.00	0.00
Osc 3 Range	LO / 32' / 16' / 8' / 4' / 2'	8'
Osc 3 Frequency	-7.00 st ... 7.00 st	-0.10 st
Osc 3 Waveform	Triangle / Rev Saw / Saw / Square / Wide Pulse / Narrow Pulse	Triangle
Osc 3 Fine Tune	-50 ct ... 50 ct	0 ct
Osc 3 Rectify	Off / On	Off
Osc 3 Offset	-1.00 ... 1.00	0.00
Osc 3 Control	Off / On	On
Osc Sync 2 to 1	Off / On	Off

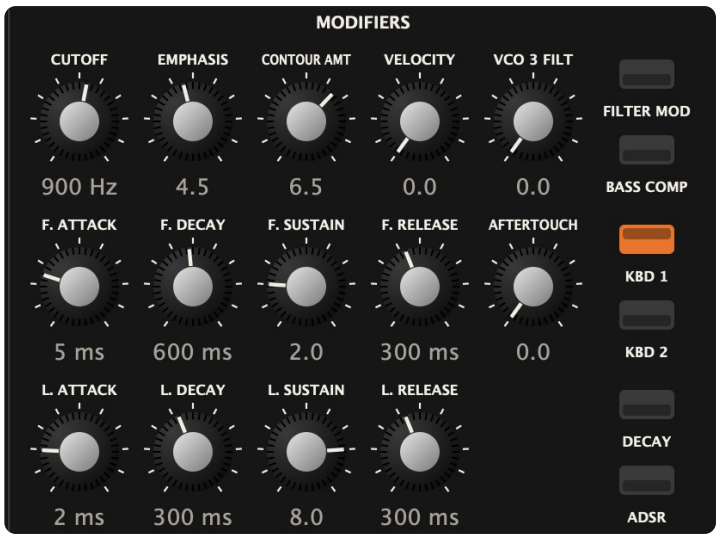
3 Mixer



The three oscillators plus white or pink noise. Push the levels and the mixer gently overdrives the filter, the secret of the original's fatness.

CONTROL (AUTOMATION)	RANGE	DEFAULT
Osc 1 On	Off / On	On
Osc 1 Volume	0.0 ... 10.0	8.0
Osc 2 On	Off / On	On
Osc 2 Volume	0.0 ... 10.0	8.0
Osc 3 On	Off / On	Off
Osc 3 Volume	0.0 ... 10.0	5.0
Noise On	Off / On	Off
Noise Volume	0.0 ... 10.0	0.0
Pink Noise	Off / On	Off
Volume	0.0 ... 10.0	7.0

4 Filter and contours



The 24 dB ladder filter, saturating in every stage, resonance up to self-oscillation. Two attack, decay, sustain contours: DECAY like the original, or an adjustable release in ADSR mode.

CONTROL (AUTOMATION)	RANGE	DEFAULT
Cutoff Frequency	20 Hz … 20.00 kHz	1.20 kHz
Emphasis	0.0 … 10.0	2.0
Amount of Contour	0.0 … 10.0	5.0
Keyboard Control 1	Off / On	Off
Keyboard Control 2	Off / On	Off
Bass Compensation	Off / On	Off
Filter Attack	1 ms … 10.00 s	5 ms
Filter Decay	4 ms … 35.00 s	400 ms
Filter Sustain	0.0 … 10.0	3.0
Filter Release	4 ms … 35.00 s	300 ms
Loudness Attack	1 ms … 10.00 s	2 ms
Loudness Decay	4 ms … 35.00 s	300 ms
Loudness Sustain	0.0 … 10.0	8.0
Loudness Release	4 ms … 35.00 s	300 ms
Decay	Off / On	Off
ADSR Release	Off / On	Off
VCO 3 Filter Mod	0.0 … 10.0	0.0

5 LFO



Five shapes, free or tempo-synced rate, to all oscillators, osc 2, the filter or the volume. AUTOPAN sweeps the sound across the stereo field.

CONTROL (AUTOMATION)	RANGE	DEFAULT
LFO Level	0.0 ... 10.0	0.0
LFO Waveform	Triangle / Square / Saw Up / Saw Down / Sample & Hold	Triangle
LFO Rate	0.05 Hz ... 30.0 Hz	2.00 Hz
LFO Tempo Sync	Off / On	Off
LFO Sync Rate	4/1 / 2/1 / 1/1 / 1/2 / 1/4 / 1/8 / 1/16 / 1/32 / 1/4T / 1/8T / 1/16T	1/4
LFO Destination	All Osc / Osc 2 / Filter / Volume	All Osc
Autopan	Off / On	Off

6 Effects



Overdrive with low and high cut, three-mode BBD chorus, tempo-syncable stereo delay, with an optional right channel twice as long.

CONTROL (AUTOMATION)	RANGE	DEFAULT
Overdrive On	Off / On	Off
Overdrive Gain	0.0 … 10.0	5.0
Overdrive Low Cut	20 Hz … 1.00 kHz	20 Hz
Overdrive High Cut	1.00 kHz … 20.00 kHz	20.00 kHz
Chorus Mode	Off / I / II / I+II	Off
Chorus Level	0.0 … 10.0	10.0
Delay On	Off / On	Off
Delay Level	0.0 … 10.0	3.0
Delay Time	10 ms … 2.00 s	350 ms
Delay Tempo Sync	Off / On	Off
Delay Sync Time	4/1 / 2/1 / 1/1 / 1/2 / 1/4 / 1/8 / 1/16 / 1/32 / 1/4T / 1/8T / 1/16T	1/8
Delay Right 2x	Off / On	Off
Delay Feedback	0.0 … 10.0	4.0

7 MIDI learn



Click LEARN, touch a control, turn a knob on your controller: they are linked. RESET clears everything.

Nothing to set here: this part shows what the plugin is doing.

8 Arpeggiator



Five modes, 1 to 4 octaves, and a 16-step pattern that chops the notes into a rhythm.

CONTROL (AUTOMATION)	RANGE	DEFAULT
Arpeggiator On	Off / On	Off
Arpeggiator Mode	Up / Down / Up/Down / Random / Played	Up
Arpeggiator Speed	4/1 / 2/1 / 1/1 / 1/2 / 1/4 / 1/8 / 1/16 / 1/32 / 1/4T / 1/8T / 1/16T	1/8
Arpeggiator Range	1 Oct / 2 Oct / 3 Oct / 4 Oct	1 Oct
Arpeggiator Gate Pattern	Off / On	Off
Arp Step 1 … Arp Step 16	Off / On	On

4 Specifications

Version	1.0.0
Price	Free
License	GNU AGPL v3 (open source)
Type	Virtual analog synth, mono or 8 voices
Formats	AU, VST3, CLAP, LV2, standalone application
macOS	10.13 or later, Apple Silicon and Intel
Windows	10 / 11, 64-bit (VST3, CLAP, LV2, standalone)
Linux	x86-64 and ARM64, including Raspberry Pi 4/5
Processing	2x oversampling, any sample rate
Latency	3 samples
CPU load	≈ 1 % of one core in mono, < 5 % with 8 voices (Apple M1, 48 kHz)
Automatable parameters	104
MIDI	Notes and velocity, pitch bend, mod wheel, aftertouch, any CC via MIDI learn

5 License and notices

Model Play is free software, distributed at no cost under the GNU AGPL v3 license: you can use it in your tracks, commercial ones included, without owing anything. The full source code is published on GitHub; if you modify and redistribute it, your changes must stay under the same license. The software is provided as is, without warranty.

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Website: https://alexlexlexlexlexlex.github.io/load-and-play/
Source code: https://github.com/alexlexlexlexlexlex/load-and-play