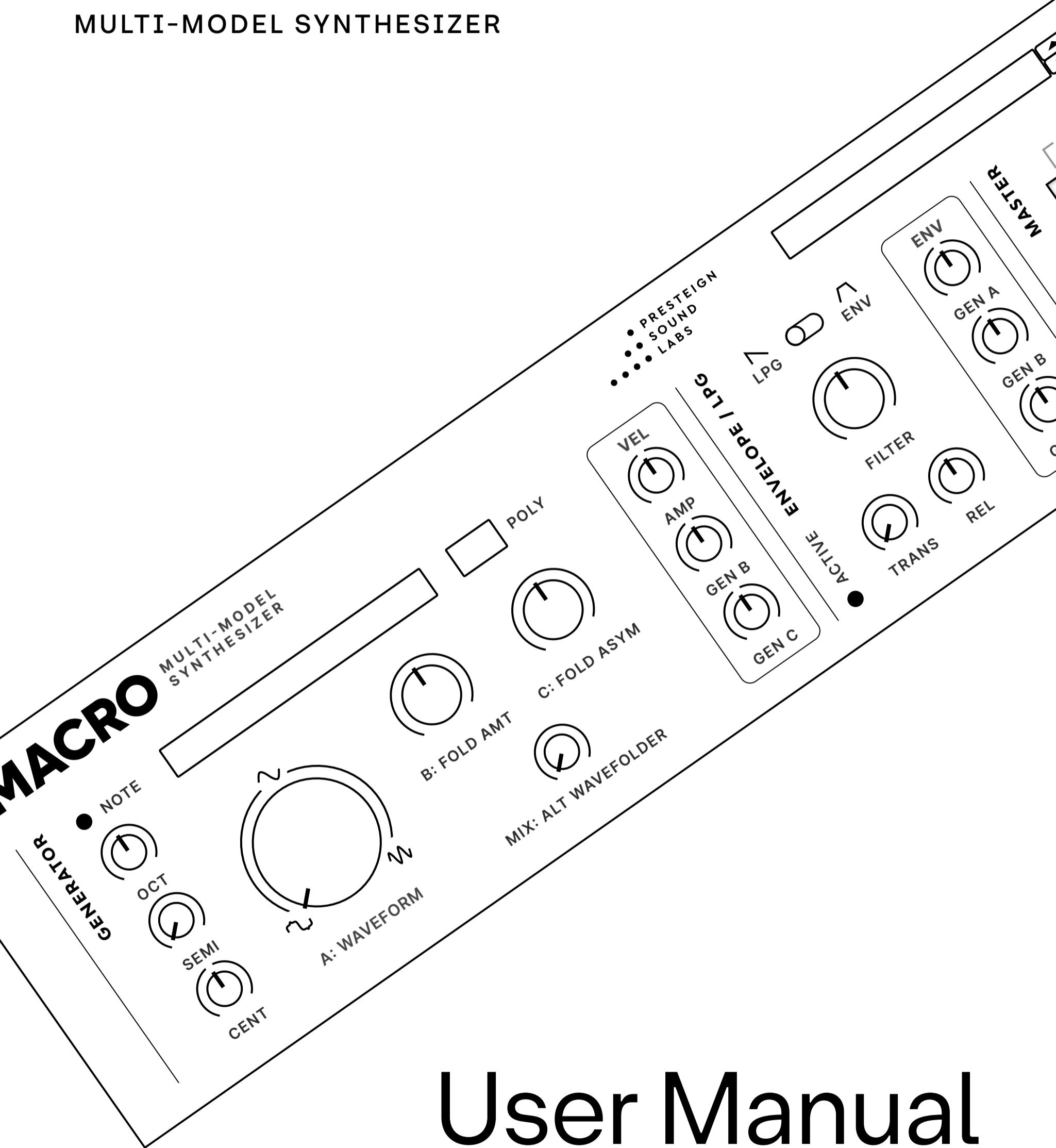


MACRO

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MULTI-MODEL SYNTHESIZER



User Manual

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Introduction

Thank you for downloading Macro!

Macro is a synthesizer Rack Extension for Reason based on Mutable Instruments' Plaits oscillator module for Eurorack.

Design Philosophy

Macro is designed to be two things at once: a self-contained synthesizer with a unique sonic palette that you can use immediately, and a module that makes that palette highly combinable with other devices. The goal is to fuse the immediacy of a standalone synth with the flexibility of a Eurorack module – and there's no other environment that can support both to the degree that Reason does.

Macro and Plaits

If you're at all familiar with modular synthesis, you might be thinking that an oscillator module wouldn't be too useful by itself – you'd need a separate envelope generator, VCA, and likely a filter for a complete synthesizer. Plaits is special, though: It has all of these built in, in the form of a lowpass gate.

Macro takes Plaits as a starting point, and expands it into something new. First and foremost, it completely changes the user interface: Freed from the constraints of a 12hp hardware module, Macro no longer requires manual diving to explain what the knobs do in each engine, thanks to a dynamic UI that brings the engines' depth to the surface.

Secondly, Macro un-hides Plaits' LPG by giving it dedicated controls, and then expands on it as well, complementing its variable release stage with a more flexible ASR envelope.

Thirdly, Macro is polyphonic. With up to 16 voices, as well as retrig and legato modes, Macro is simultaneously a standalone synthesizer and one part in your next modular masterpiece.

Overview

Signal Flow

Sound in Macro starts with the Generator, then flows through the lowpass gate, or LPG. The Generator actually generates two sounds at once: the regular signal and an “aux” signal. This aux signal can be mixed with the regular signal, panned to create a stereo image, or output directly.

Generator Section

Engine Select

Click on the engine name (defaults to Virtual Analog Pair) to select from one of 16 sound engines.



Note: Engines marked “(LPG)” have their own built-in lowpass gate and do not use the Envelope/LPG section.

Oct/Semi/Cent

These are the standard Reason pitch controls: Octave, semitone, and cents.

A/B/C

The A, B, and C knobs control the character of the sound. Depending on the engine selected, each knob will do something different, as described by its label. Certain engines may have visual guides (such as the waveforms in Virtual Analog Pair) to help you shape your sound.

If you’d like to learn more about the engines in detail, the creators of Plaits have a full rundown in the Plaits manual: <https://mutable-instruments.net/modules/plaits/manual/>

Mix

This knob mixes in the aux signal, an alternate version of each sound engine. By default, only the regular signal is heard, while at 50%, both the regular and aux signal are equally loud. At 100%, only the aux signal is heard.

Vel

This section modulates generator parameters by velocity. Amp modulates the loudness, while Gen B and Gen C modulate their respective engine controls.

LPG/Envelope Section

Unlike traditional subtractive synthesizers, Macro does not have a typical filter or separate amp and filter envelopes. Instead, it uses a lowpass gate, which combines a simple envelope (either a release stage or an attack-sustain-release envelope) with a VCA and lowpass filter. The envelope controls the amplitude and the filter simultaneously, with the amount of the latter being adjustable.



LPG - Env

LPG mode is a single-stage envelope with a variable release tail, ideal for plucks and drum hits. Env mode is an attack-sustain-release envelope with variable attack and release, suitable for sustained notes, pads, and textures.

Filter

The filter knob controls the amount of modulation that the envelope has on the filter. In other words, it adjusts the correlation between the filter cutoff and VCA level. At 0%, both the cutoff and level are fully modulated by the envelope, while at 100%, only the level is modulated and the filter stays fully open.

Trans/Atk

In LPG mode, the Trans knob adjusts the transient of the note. Due to the way the original hardware code “stabilizes” the oscillators, certain settings can generate a

percussive transient that you may or may not want. Increasing the Trans knob suppresses this transient.

In Env mode, the Trans knob becomes the Atk knob, which adjusts the attack time of the envelope.

Rel

In both LPG and Env modes, the Rel knob adjusts the release time of the envelope.

Env

This section allows you to use the release or ASR envelope to modulate engine parameters. Gen A, Gen B, and Gen C modulate their corresponding controls in the Generator section.

Master Section

PB/Range

This is the standard Reason pitch bend control. Range controls the number of octaves that the pitch bend wheel bends up or down.



MW/Gen A

This is the standard Reason mod wheel control. Gen A controls how much the mod wheel affects the A parameter in the Generator section.

Spread

If the aux signal is mixed in (Mix is set above zero in the Generator section), Spread pans the regular and aux signal left and right (or right and left) depending on the direction.

Volume

This is the standard Reason volume control.

Back Panel

Audio Outputs

L and R are standard stereo outputs.

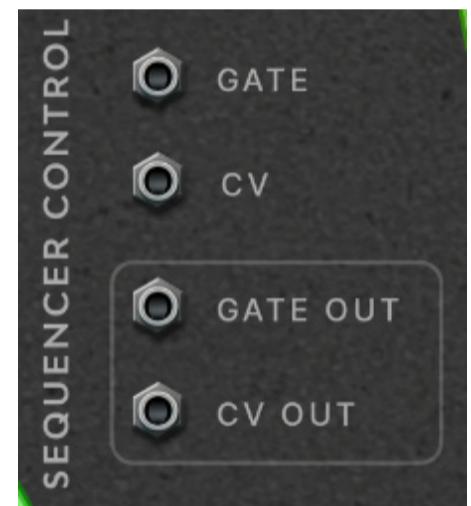
Aux is a direct output of the alternate signal that is normally mixed in via the Mix knob. In many cases, this is an alternate version of the generator algorithm that will sound similar to the main signal, while in other cases, it will be very different, such as a transient by itself.



Sequencer Control

Gate and CV are standard Reason gate and note-CV inputs.

Gate Out and CV Out allow you to trigger other devices by passing through the incoming MIDI notes as (monophonic) CV. See the section “Macro as a Module” for more about the possibilities this opens up.



Generator Mod

Model Select: This input will change the model based on quantizing the incoming CV to the nearest 1/16 value.

Gen A / B / C: These inputs will modulate the A, B, and C parameters based on CV input.

Mix: This input will modulate the balance of the main signal versus aux based on CV input, following the same pattern as the knob on the front.



Envelope / LPG

Filter: Modulate the filter/amp correlation by the incoming CV.

Atk: Modulate the envelope attack time by the incoming CV.

Rel: Modulate the envelope release time by the incoming CV.



Env Map

This switch changes the way the envelope maps to the LPG.



Lin: The envelope follows a linear function.

Exp: The envelope follows an exponential (cubed) function.

Dir/Lin: The envelope is modulated directly by the original Plaits LPG envelope. In ENV mode, a linear function is used.

Macro as a Module: A Mini-Tutorial

One thing you may notice as you experiment with Macro is that because of how the lowpass gate is designed, you will always hear the filter completely open at some point in a note. When its ASR envelope is engaged, this is especially noticeable, as that point in the note is the sustain! If your sound sounds too bright, this is where Macro invites you to head back over to the devices palette and try pairing it up with something. While Reason has had the ECF-42 filter since version 1, it may not be as obvious that it has another, more powerful filter module since Reason 11: Sweeper. Sweeper may be billed as a phaser, but it has a multimode filter with 9 different models!

Pair Macro up with Sweeper in filter mode and now you have something uncommon in Reason (and in software synthesis in general): a paraphonic synthesizer. You have the polyphonic voices of Macro, fed into Sweeper's monophonic filter. If you've never tried the audio follower in Sweeper, give it a try: You can get some really tasty sounds combining just Macro's virtual analog osc with Sweeper's 24db ladder lowpass controlled by the follower.

But you don't have to stop there. Remember the MIDI to CV output in Macro? That outputs the gate of notes you play as gate CV, which can be used to trigger Sweeper's envelope directly. Or use the note CV output to keyboard-track the filter, or combine both with a Spider or CV utility of your choice. Hopefully this is where you can start to see the possibilities unfold!

Credits

Original concept and UI design: Clayton Miller

Software development and engineering: Yan Pujante

Mutable Instruments Plaits code by Emilie Gillet. Used under MIT License.

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