INTRODUCTION

By combining a mixer and four VCAs in a single module, Mix 3 manages to provide a unique combination of compact size and functionality in just 6 HP. High-end signal paths ensure extremely low noise and distortion, wide headroom and precise gain control, despite the small form factor.

Each of the three main channels has an exponential response, which is more natural for audio than linear, as it matches the human hearing. However, all signal paths are DC-coupled, so control voltage (CV) signals can be processed as well.

What truly sets Mix 3 apart from other compact mixing modules are the three CV inputs, providing voltage control over the signal levels. This even allows you to go beyond unity gain and reach up to +20 dB of amplification. Once a CV input is used, the corresponding channel knob becomes a CV attenuator.

When clipping, Mix 3 does so in a clean, symmetrical way. This yields a very pure overdriven sound, only containing odd harmonics, and allows the module to be used as a triple voltage controlled distortion.

Additional features include audio indicator LEDs, a fourth auxiliary input, voltage control over the output level and a line output jumper setting.

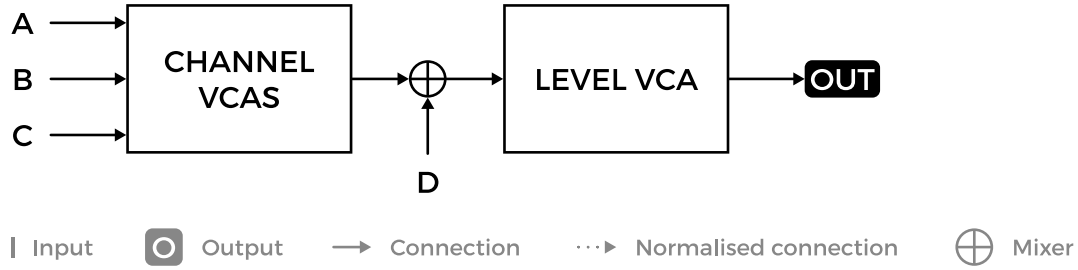
CONTENTS

In the Mix 3 box, you'll find:

- Product card, stating serial number and production batch.
- 16-to-10-pin Eurorack power cable.
- Mounting hardware: two black M3 x 6 mm hex screws, two black nylon washers and a hex key.
- The Mix 3 module itself, in a protective cotton bag.

If any of these items are missing, please contact your dealer or support@joranalogue.com.

SIGNAL FLOW



CONTROLS & CONNECTIONS

1 CHANNEL KNOBS

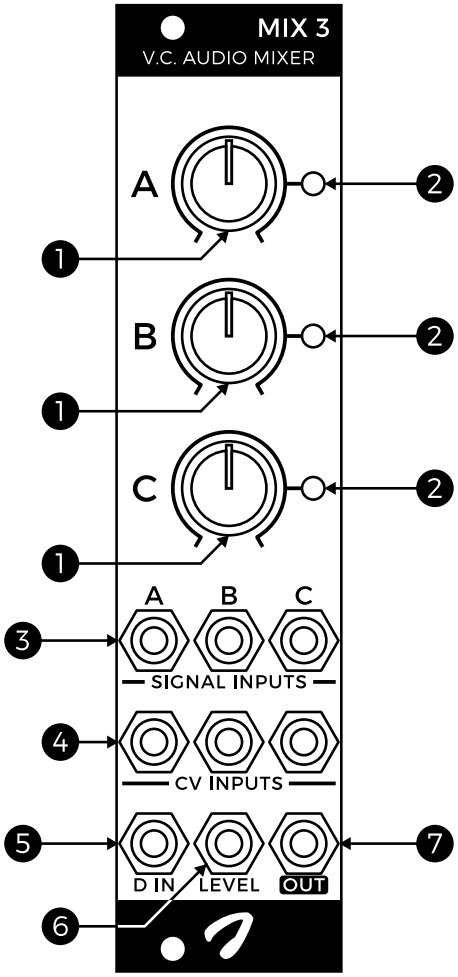
The channel knobs provide manual control over the signal levels. The response is exponential, starting from 0 dB (unity gain) at maximum. They also function as CV attenuators once the corresponding channel CV input is used.

2 CHANNEL INDICATOR LEDS

Each channel features an audio indicator LED with a VU-like decay. This makes Mix 3 very convenient in use, especially in large patches and/or during performance. The LEDs are most useful for quickly identifying rhythmic signals. As these are pure audio indicators, slow CV signals or DC offsets are ignored.

3 CHANNEL SIGNAL INPUTS

Connect your input signals to these sockets. While designed for audio use, the signal paths are non-inverting DC-coupled, so control voltage (CV) signals can be processed as well.



4 CHANNEL CV INPUTS

The channel CV inputs enable exponential voltage control over each channel's signal level. Once a jack is plugged in, the corresponding channel knob becomes an attenuator for the CV input.

With the attenuator at maximum, the response is +12 dB/V, with 0 dB (unity gain) at +5 V. Each channel automatically mutes at 0 V, seamlessly fading the gain from –60 dB down to –100 dB.

It is possible to amplify using the CV input, up to +20 dB at +6.66 V.

5 D SIGNAL INPUT

The 'D' auxiliary signal input allows you to mix in a fourth signal with the three main channels. It is DC-coupled, unity gain, inverting.

6 LEVEL CV INPUT

An additional CV input is provided to control the total level of the mix signal. It has the same response as the channel CV inputs, and can thus also be used to amplify/distort the entire mix. If unused, the mix signal level remains unity gain.

7 SIGNAL OUTPUT

The mix signal is available at this output socket.

PATCH IDEAS

WAVEFORM MIXER

Patch three waveform outputs from a single VCO to the signal inputs and use the channel knobs to shape a new compound waveform. The CV inputs provide voltage control over the individual components.

TRIPLE AMPLITUDE MODULATOR

Using multiples, connect the same audio signal to each of the signal inputs. Generate modulation signals using three audio frequency oscillators and plug them into the channel CV inputs. The result is a complex timbre, controlled by the waveforms and frequencies of the input signals and the Mix 3 knob settings. Sweep the main input signal's frequency to hear it beat against the various modulation frequencies.

TRIPLE OVERDRIVE/DISTORTION

While Mix 3 is designed to sound as clear and transparent as possible, overdriving it can bring a lot of character to your patches. Connect a constant voltage of about +6.66 V to a channel CV input. From 75 % of the knob range onwards, the channel will now begin to amplify rather than attenuate. Going further, the signal will get clipped, generating ever more odd harmonics. Unlike most Eurorack modules, Mix 3 clips symmetrically, so no even harmonics are formed. This results in a purer distortion sound.

PERCUSSION GENERATOR

In this patch idea, the distortion feature is used to create percussive sounds. Connect a sine wave source to a channel input, and an envelope generator to the corresponding CV input. Use an EG which generates high enough voltages to attain clipping; at least +5.5 V for most signals. Set it to zero attack time and sustain level, and moderate decay and release time. Provide the EG with a clock to repeatedly trigger it.

The attack of the resulting percussive sound will be crisp, high in harmonic content. As the envelope falls, the signal becomes both duller and quieter in a very smooth way. Adjust the tone of the sound using the channel knob.

Using three sine wave sources and three envelopes, different percussion instruments can be emulated (for example, a kick drum and two toms).

SPECIFICATIONS

FORMAT
Doepfer A-100 'Eurorack' compatible module
3 U, 6 HP, 30 mm deep (inc. power cable)
Milled 2 mm aluminium front panel with non-erasable graphics

MAXIMUM CURRENT DRAW
+12 V: 30 mA
–12 V: 25 mA

POWER PROTECTION
Reverse polarity (MOSFET)

I/O IMPEDANCE
All inputs: 100 kΩ
Output: 0 Ω (compensated)

UNITY GAIN ERROR
0.5 dB maximum

BANDWIDTH
36 kHz (–1 dB)

OUTER DIMENSIONS
128.5 x 30 x 43 mm (H x W x D)

MASS
Module: 90 g
Including packaging and accessories: 175 g

SUPPORT

As all Joranalogue Audio Design products, Mix 3 is designed, manufactured and tested with the highest standards, to provide the performance and reliability music professionals expect.

In case your module isn't functioning as it should, make sure to check your Eurorack power supply and all connections first.

If the problem persists, contact your dealer or send an email to support@joranalogue.com. Please mention your serial number, which can be found on the product card or on the module's rear side.

REVISION HISTORY

Revision F: added automatic muting feature. Older revisions require negative level CV to attain attenuation below –60 dB. Removed output level jumper (optional –20 dB pad).

Revision E: no functional changes.

Revision D: no functional changes.

Revision C: initial release.

With compliments to the following fine people,
who helped to make Mix 3 a reality!

Björn Jauss Boris Uytterhaegen

Gregory Delabelle Jan D'Hooghe

Jens Van Daele Vincent Vanesse

Everyone at Wired Electronics

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AUDIO DESIGN

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