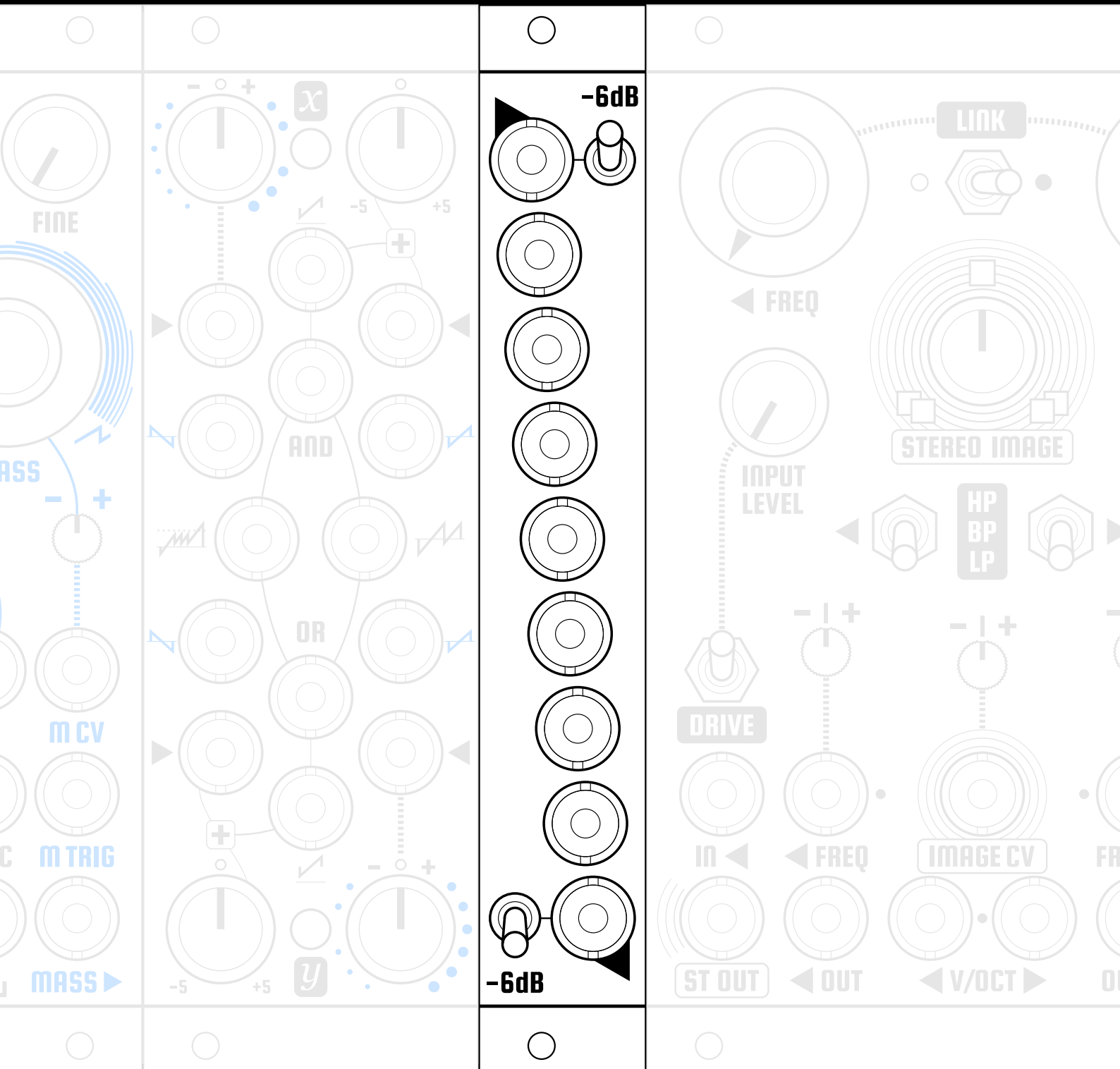


μSt

Minimal panning mixer



User manual

 **olivella modular**

Introduction

Olivella Modular μ St is a minimal panning mixer based on [Nearness](#), an open-source design by Jesper Särnesjö.

It features **seven inputs and two outputs** (top and bottom jacks). **The closest an input is to an output, the greater its influence on it**, either audio getting louder or CV getting more or less attenuated.

The **PAD switches attenuate their respective outputs by -6dB** in case you use μ St as the output module of your rack or to avoid clipping if you're mixing hot input signals within your system.

μ St is fully **DC-coupled**: it handles both audio and CV.

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Features

- ▶ 7 inputs, two output mixer
- ▶ PAD switches attenuate the outputs by -6dB
- ▶ Great sound quality and CV accuracy

Details

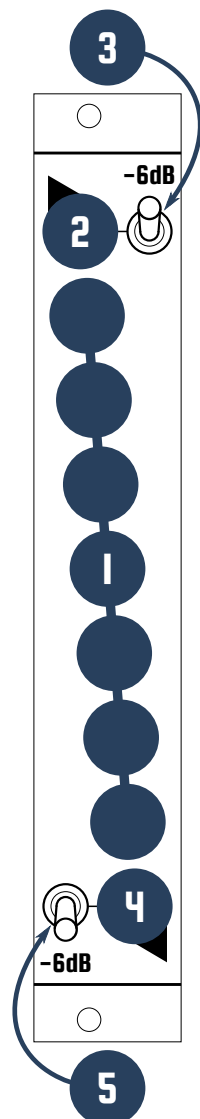
- ▶ Fully DC-coupled
- ▶ All inputs allow DC to audio-rate signals
- ▶ Input impedance: ~50 k Ω (nominal) – 100 k Ω to 1.5 M Ω (real)
- ▶ Output impedance: 1 k Ω (rev 1.0) – 510 Ω (rev 2.0)

- ▶ Width: 4 HP
- ▶ Depth: 40 mm (rev 1.0) – 25 mm (rev 2.0)
- ▶ +12V: 25 mA
- ▶ -12V: 25 mA
- ▶ Reverse power polarity protection

Installation

- ▶ Check that your Eurorack synthesizer is **powered off**.
- ▶ Connect the 10 pin side of the power cable to the 2x5 pin power header on the back of the module, **making sure that the red stripe on the cable is connected to -12V** (as shown on the back of the module).
- ▶ Connect the 16 pin side of the power cable to a free 2x8 pin power header on your Eurorack power supply, again **making sure that the red stripe on the cable is connected to -12V on your power supply**.
- ▶ Mount the module in your Eurorack case.
- ▶ Power it on!

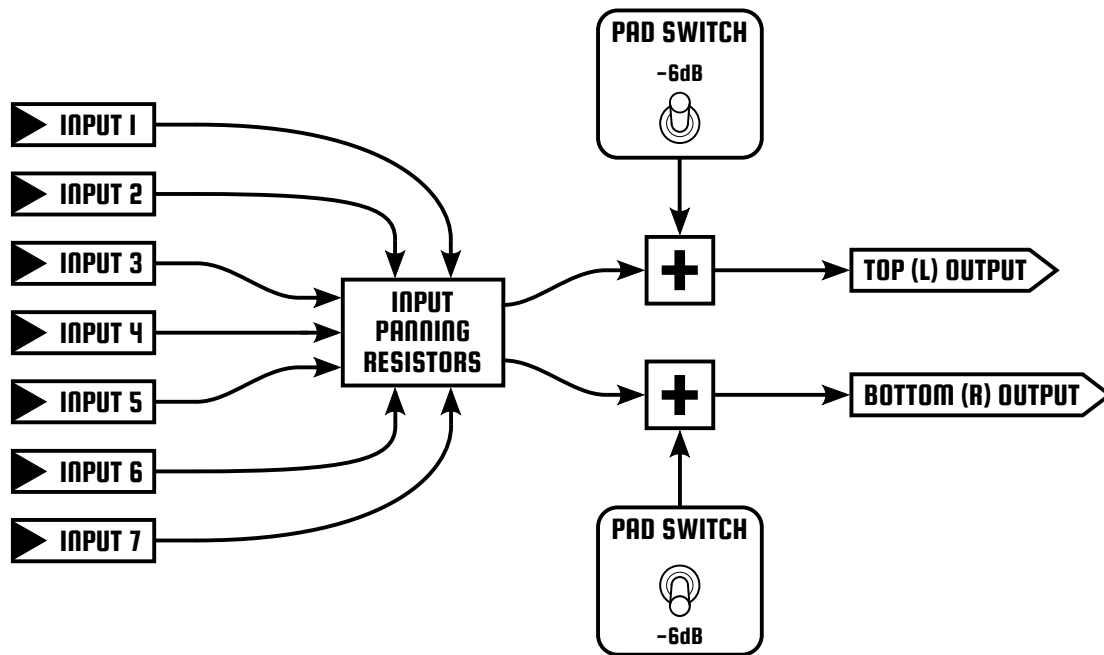
In case that the power cable gets installed backwards **the module will not get damaged** because it features reverse power polarity protection, but it won't work plugged the wrong way around.



Panel overview

- 1 Inputs
- 2 Top output
- 3 Top output PAD switch
- 4 Bottom output
- 5 Bottom output PAD switch

Block diagram



How it works

μ St has **seven DC-coupled inputs**, meaning that they accept both CV and audio signals. When unpatched, they're normalled (internally connected) to 0V.

The input signals pass through a **series of input resistors** whose values – ranging from 100k Ω to 1.5M Ω – determine their gain when summed into the TOP (L) or BOTTOM (R) mixers and, therefore, **the signals' position in the stereo field** when monitoring μ St in stereo or **the amount of attenuation** when monitoring the outputs individually.

μ St roughly approximates the **constant-power panning law**, meaning that if you're monitoring it in stereo all audio signals should sound about as loud across the stereo field.

The PAD (-6dB) switches

These **control the gain** of their respective TOP (L) and BOTTOM (R) mixers. Moving away from the "-6dB" text on the panel does not affect the channel's gain, while **switching towards it reduces it by half** (-6dB).

This can be useful to **double μ St's input headroom** and avoid clipping (or embrace it if you don't!) or to **halve the output level**, for internal gain staging or easier interfacing between your Eurorack system and an external line-level device, like a mixer or an audio interface.