

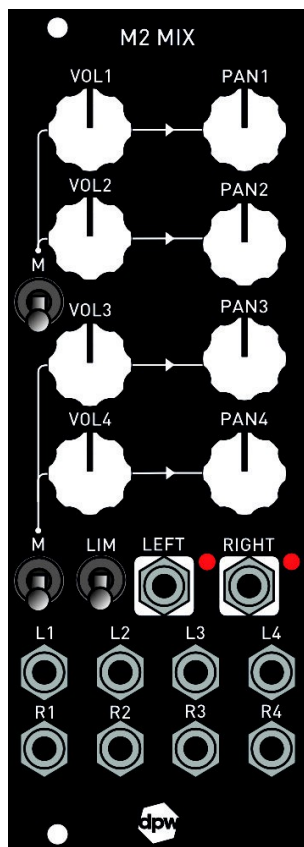
# M2 Mix



The Mix is a compact 4 channel stereo mixer that also can be set up to be up to 8 channels of mono with crossfading in 4 groups. It also has a built in soft knee limiter for subtle level control or harder creative coloring of the sound.

It is designed to be a flexible compact part of your system. As the main mixer for a small system or you have a few distributed in your bigger system and use one to collect the signals from all of them as the main out.

The unit can be used as a utility module for control voltages as well as for audio. It is DC coupled.



## Inputs, stereo mode

There are 4 channels of stereo input with volume and pan control. When using one of the channels with mono in stereo mode you can connect to either left or right channel. The left and right inputs are normalised to each other.

All channels have one time amplification (unity gain) when the Vol knob is turned fully clockwise.

The module is designed to never clip internally but the levels can get high at the output stage. So the output stage has a controlled nice sounding round clipping that limits the output to +/- 10V.

Use the output LEDs as a guide to get an output level that doesn't clip.

The bandwidth of the module in this mode is 150 kHz (-3dB point) so there is basically no unwanted frequency dependent phase shift in the audio range.

The extended bandwidth will also make the sound of the mixer very transparent.

## M switches

The M switches (mono) turns the channels left and right input to dual mono with the Vol knob as a volume for both and the Pan becomes a mono crossfade between the left and right input.

The M switches affects the channels in two groups. The upper M switch affects channel 1 and 2. the lower affects channel 3 and 4.

This means that engaging one or two M switches can give you 4 mono with two groups of crossfade plus two stereo channels or 8 channels of mono with 4 groups of crossfade.

The crossfade can be used as a performance feature to gradually crossfade from one part of your system to another or to build more complex voices.

If only one side of a channel is connected, the M switch for that channel is on and Pan is in center position you will get a two times amplification of that channel. Can be used for extra boost where needed.

## Lim switch

Lim engages a multiple soft knee limiter on the output stage that brick wall limits the output to +/-5V (+14 dBV). It is designed to have a very transparent sound if not driven hard.

When Lim is on the amplification on all channels also increases by a factor of two. This means that unity gain on all channels will be with the Vol knob at the 12 o'clock position.

The limiter can be used to protect equipment connected after the Mix module like non Eurorack equipment as levels otherwise could get a bit too hot.

The limiter can be used as a creative tool to glue the output mix together.

It can also be used as an effect when driven hard. The reason for the increased amplification when the limiter is on is for this purpose.

If the whole mix is driven fairly hard through a single limiter like this you will get musical artifacts that are similar to side-chaining a fast compressor.

## LED indication

The LEDs will light up when the outputs are at 5V as a help to get your levels right.

In clean mode a good tip would be to set things up so they flash just a little at the peaks in the signal. You then know you have headroom to the 10V where the output stage clips.

When Lim is on you can see on the LEDs how hard you are driving the limiter.

## Device specs

Module size:	9 hp wide, 30 mm deep with power cable connected.
Input impedance:	200 kohm if both left and right are connected. 100 kohm if only one side is connected.
Output impedance:	1 kohm
Bandwidth:	Clean setting 0 to 150 kHz. With Lim switch on 0 to 21 kHz.
Power requirements:	+/-12V. Max power consumption 25 mA Connect the power cable with the red stripe down towards the -12V marking. The unit is protected for reverse power.