

Front panel

- **A. B. C. D. Channel gains**. These knobs have an effect only when the keyframe indicator (G) is lit, that is to say when a keyframe has been recorded at the position pointed by the **FRAME** knob.
- **E. Creates a keyframe** at the position pointed by the **FRAME** knob. The timeline can contain up to 64 keyframes.

Tip: hold ADD (E) for five seconds to save the current configuration of the module. It will be restored the next time the module is powered on.

Tip: hold DEL (F) for five seconds to erase all keyframes and get back to a blank state.

- F. Deletes the keyframe at the position pointed by the FRAME knob.
- **G. Keyframe indicator** lit when there is a keyframe at the position pointed by the FRAME knob. The keyframe can be edited by the knobs A, B, C, D; or deleted with F.
- H. Frame knob scrolls through the animation.
- **I. Animation attenuverter.** Attenuates and inverts the polarity of the signal received on the **FRAME** CV input.
- J. +10V offset. When enabled, a +10V constant CV is sent to the ALL input unless a jack is connected in it.

- **1. Common input**. The signal patched here is sent to all unconnected input channels.
- 2. 3. 4. 5. Channel 1, 2, 3, 4 inputs.
- **6. Animation input**. This CV modulates the position of the **FRAME** knob.
- 7. Mix output sum of channel outputs 8, 9, 10, 11.
- **8. 9. 10. 11.** Channel 1, 2, 3, 4 **outputs**. When a patch cable is connected there, the channel is removed from the global mix.
- **12. Frame step output**. Sends a 1ms trigger pulse every time a new keyframe is reached.

Inspiration

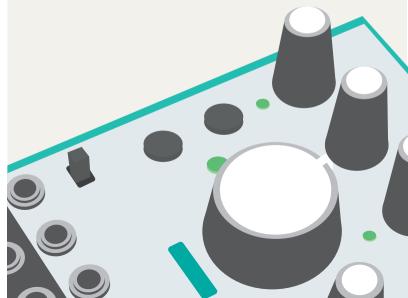
- Patch waveform outputs from a VCO to all four inputs, and animate their mix, wavetable-style.
- Send basic gate patterns to each input, and use the gains to create CV melodies. Morph between them.
- Stereo or quadraphonic panning.
- Dispatch the same sound source to 4 different filters, wavefolders. FX...
- Patch a simple ADSR envelope to the FRAME input.
 Get 4 synchronized multi-stage envelopes!
- You can mix and match attenuation/gain channels and CV generation channels. For example, use 2 channels as VCAs, and 2 channels as CV sources. Mix and control 2 VCOs.





Frames

Keyframer / mixer



About Frames

Frames brings to Eurorack modular systems the concept of keyframing, widely used in computer animation.

It allows up to 64 configurations of gains (or control voltages) to be stored and morphed into one another. Mix, pan, morph, dispatch or control four channels of sounds or CV!

Installation

Frames requires a -12V / +12V power supply (2x5 pins connector). The red stripe of the ribbon cable (-12V side) must be oriented on the same side as the "Red stripe" marking on the board.

The power consumption is as follows:

-12V: 30mA; +12V: 90mA.

Online manual and help

The full manual can be found online at mutable-instruments.net/modules/frames/manual

For help and discussions, head to mutable-instruments.net/forum



Please refer to the online manual for detailed information regarding compliance with EMC directives

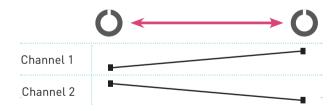
Walkthrough

Power on the module. Connect two different audio sources to channels 1 and 2. Listen to the signal from the MIX output. Frames works like a mixer.

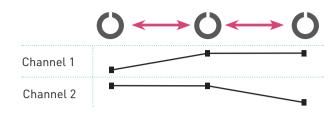
Turn the **FRAME knob** fully counter-clockwise. Press the **ADD button**. Using the first two knobs on the top row (labelled 1 and 2), mute channel 1 and set channel 2 to maximum level.

Turn the FRAME knob fully clockwise. Press the **ADD button**. Mute channel 2, set channel 1 to maximum level.

What happened? You have created two keyframes, each of them storing a different configuration of the channel gains. By moving the **FRAME knob**, you can interpolate back and forth between them. The **FRAME knob** is like the play-head moving through an automation curve.



Move the **FRAME knob** to the middle position. Press the **ADD button**. Set the two channels to their maximum level. You have created the animation shown on the next page.



Send a LFO to the FRAME CV input and adjusts its amount with the MODULATION attenuverter to move through the animation.

Signal flow

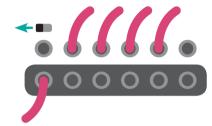
Frames is not just a mixer. It is actually comprised of four digitally-controlled analog VCAs with DC coupling.

- Each VCA has an individual input and output.
- When no jack is connected to a channel input, the signal from the ALL input is processed instead.
- When no jack is connected to the ALL input, and if the +10V offset switch is on, the ALL input receives a constant 10V CV. Sending this constant voltage into a VCA turns it into a CV source!

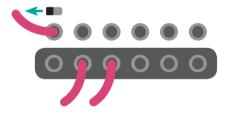
When no jack is connected to a channel output, the signal is sent and summed to the **MIX output**.

Patch examples

Mixing



Dispatching/panning



CV generation

