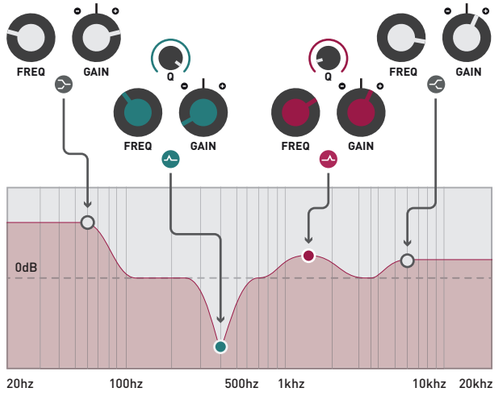
Mutable
Instruments

www.mutable-instruments.net



Tips and patch ideas

- Practice by sculpting a very rich and wide-band material like white noise.
- Patch a low, constant CV (for example -5V) into the low-shelf's (or high-shelf's) **GAIN** input to use it as a high-pass (or low-pass) filter
- Sweep and shift the whole EQ curve across the spectrum by modulating the global **FREQ** input.
- Strange phase-y sounds can be obtained by setting the two parametric sections to slightly different frequencies, then using one for boost and the other for attenuation. They will largely compensate each other in terms of gain, but create a phase shift.
- Use **Shelves** in the feedback loop of an FX processor, or for subtly balancing a complex patch based on feedback.
- Control **Shelves** from a quadrature LFO or Mutable Instruments' **Frames**. With a harmonically rich VCO as an input signal, this is a good recipe for space-y, evolving drones!
- A bit of equalization, simulating the body of an instrument, is sometimes just enough to take a physical modelling patch out of the uncanny valley.

Modifications

A jumper can be installed, or a switch can be wired, on the 1x3 pin selector available on the back of the module and labelled -6dB / 0dB. This adds a switchable -6dB gain on the input signal, giving you more headroom for extreme boosting.

The two parametric sections are realized with 2-pole state-variable filters. The individual low-pass, band-pass, and high-pass outputs of these two filters are available on two 1x3 pin connectors.

Mutable
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Shelves

EQ filter



About Shelves

Shelves is a voltage-controlled signal processor altering the spectrum of audio signals, inspired by the EQ section of console channel strips.

Just like many sought-after equalizers, it provides low-shelf, high-shelf, and two parametric tone controls. Unlike those found in an equalizer, each of these four sections can be swept over the entire audio range; and their parameters can be freely modulated with control voltages.

Installation

Shelves requires a **-12V / +12V** power supply (2x5 pin 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: 75mA ; +12V: 75mA.

Online manual and help

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

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

Ranges and scales

On all sections, the **FREQ knob** spans the entire audio range, from 20 Hz to 20 kHz.

The **FREQ CV input** has a 1V/Oct scale and acts as an offset to the value set by the **FREQ knob**.

The **GAIN knob** covers an attenuation/boost range of -15dB to +15dB.

The **GAIN CV input** has a 3dB/V scale and acts as an offset to the value set by the **GAIN knob**.

Gains above +15dB cannot be reached, even by adding a positive CV offset to the **GAIN CV input**. However, gains below -15dB can be obtained by adding a negative CV offset to this CV input.

On the two parametric sections, the **Q** parameter, which controls filter selectivity, goes from 0.5 to 1000.0.





Front panel

Controls

A. High-shelf section. This section boosts or attenuates all frequencies above the **FREQ** control. The **GAIN** potentiometer controls the amount of attenuation or boosting. No modification is applied when **GAIN** is in its central position.

B. Parametric sections 1&2. These two sections boost or attenuate all frequencies in a frequency band whose central frequency is set by **FREQ**. The narrowness of this frequency band is set by the **Q** setting - from very wide to very selective.

C. Low-shelf section. This section boosts or attenuates all frequencies below the **FREQ** control. The **GAIN** potentiometer controls the amount of attenuation or boosting.

Inputs and Outputs

1. 2. Global frequency and **gain CV** inputs. These CV inputs simultaneously shift the **FREQ** or **GAIN** of all four sections.

3. IN. Audio input.

4. Output clipping indicator. It is recommended to reduce the level of the input signal - or to reduce the gain on all sections - when this LED lights up.

5. OUT. Audio output.