

Sugar Bytes Rack Extensions



Spectralizer Arranger Manual

The Spectralizer is a filter bank with 32 delays. Every delay has its own delay time and filter frequency.

The delay time and density are determined by the **Delay Time** parameter with three different modes: “Tonal”, “Sync”, and “Free”.

In “Tonal” mode, the timings of the 32 delays are defined in Hertz (Hz). This way you can tune the sound to a desired frequency. In “Sync” mode, the timing of the delays are related to the tempo (BPM) in Reason. This mode is useful for creating rhythmic progressions. The “Free” mode lets you define the delay in milliseconds (ms). This mode is recommended if you want to tweak the delay time while playing. With values ranging from 5 to 30 ms you can create very robotic sounds.

The **Frequency** parameter controls the frequency distribution of the delays. If turned to 0 the result will be low to high distribution. This means that the early delays will pass low frequencies while the later delays will pass the higher ones. If you turn this parameter to 100% it will behave in the opposite way: first you'll have the high frequencies and then the low ones.

Values between 0 – 100% will result in a mixture of these two behaviours.

The **Frequency** parameter modes not only affect the frequency of the delays, but also the rhythmic relation between them. Play around with the settings to get a lot of variation.

The **Resonance** parameter is essentially the classic filter parameter you probably are already familiar with. Note that we have put some special work into high resonance values. In classic filter effects, high values will make the sound louder, and this would have made this effect unusable, because there are 32 filter delays. So we came up with some special damping algorithms which can handle high resonance values. At the end you can create very nice sounding textures with high resonance. For example, you can get a futuristic bubble sound which is highly dependent on the incoming audio signal.

The two modes here relate to panning, not resonance.

These modes distribute the delays to the left and right in order to widen the sound.

The **Bands** parameter defines how many of the 32 delays you want to use. Turned to 100% you'll have all 32 filter delays, resulting in a fat and complex sound. If you want the sound to be more subtle, try using fewer bands. The modes here gives you the option to leave out certain bands. In 2nd mode only every other band is used. In 3rd mode only every 3rd band is used.

The **Dry/Wet** control determines the mix between the original and the processed signal.

There are three options for defining mixing behavior:

- **Linear**: The mixing happens in a linear fashion — the center position provides 50% original and 50% processed signal.
- **Wet**: The processed signal is added to the input. This option is mostly used for reverbs and delays.
- **Equal**: The signals are mixed according to the equal power law: center position will result in about 70% original and 70% processed signal.

Note that the Spectralizer uses quite a bit of CPU because of its 32 filters and delays. If you just use it for certain parts in your song make sure to turn the **Dry/Wet** control to 0 when you don't use it. The “0” setting turns the effect off and avoids unnecessary processing.

All parameters are controllable via CV.