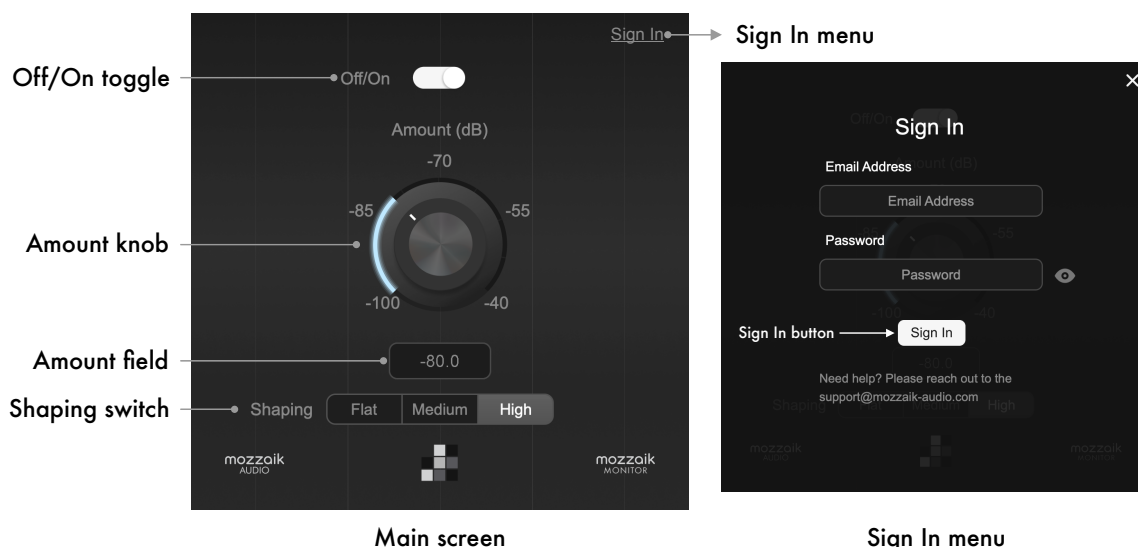


Mozzaik Monitor v1.0 User Guide



Mozzaik Monitor adds noise of a very low level to the signal that goes to the DA converter. Delta-sigma converters can produce idle tones and limit cycles when the signal is very quiet or constant; a small amount of noise at the input breaks these patterns up. How much it helps depends on the converter. The signal itself is not changed.

AD converter. The noise can help an AD converter in the same way: send the output of Mozzaik Monitor through a DA converter and mix it with the signal in the analog domain, before the conversion.

Use. Insert Mozzaik Monitor as the last plugin on the monitoring path. For export turn it Off, or leave it On if you think that the noise will help the converter of the listener; it then goes before Mozzaik Dither.

Sign In menu can be accessed by clicking Sign In in the top right corner. By entering the email address and password of your Mozzaik account and pressing the Sign In button you are signing in Mozzaik Monitor. It uses the same account as Mozzaik Dither. Without signing in, the plugin turns itself Off after 10 minutes.

Used open source software:

- ASPiK
- Curl
- Jansson
- OpenSSL
- zlib

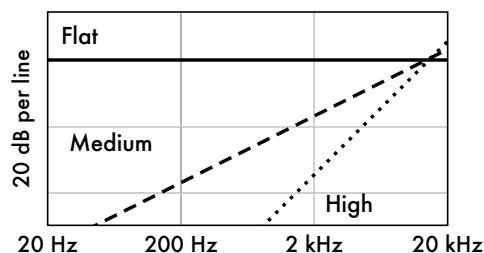
Off/On toggle turns the noise on. The noise fades in and out in 10 ms, without a click. In the Off position the signal passes unchanged.

Amount knob sets the level of the noise, from -100 dB to -40 dB. The default is -80 dB. **Amount field** displays the level; a value can also be typed into it.

Shaping switch selects the spectrum of the noise:

Shaping	Noise between 0 and 20 kHz
---------	----------------------------

Flat	white, the same at all frequencies
Medium	rises 6 dB per octave
High	rises 12 dB per octave (default)



Sample rate. At 44.1 kHz the level of the noise equals Amount. At other sample rates, up to 384 kHz, the level between 0 and 20 kHz stays the same. From 88.2 kHz up the noise falls above 20 kHz with 12 dB per octave.



VST is registered trademark of
Steinberg Media Technologies GmbH



Setting it up

Starting point. Use three instances of Mozzaik Monitor in a chain:

- Insert them in the last three slots of the monitoring path (control room or monitor bus), not on the master that is exported.
- Set the first one to High and -80 dB. It covers the upper part of the spectrum: most of its noise is between 10 and 20 kHz, where hearing is least sensitive.
- Set the second one to Medium and -85 dB. It covers the mid range, below the band of the High instance.
- Set the third one to Flat and -100 dB. It adds noise in the low range, where the other two leave very little.
- The noise of the instances is not correlated, so their levels add as power.

Upper part of the spectrum. Switch the first instance Off/On and compare. If there is no difference, the converter probably handles this well already. If there is, change its Amount from -80 dB up or down until it sounds best. If the noise can be heard at normal monitoring levels, lower Amount.

Mid range. Switch the second instance Off/On and listen whether it sounds better. Then change its Amount from -85 dB up or down until the combination sounds best with the converter.

Lower part of the spectrum. Tune the third instance the same way: switch it Off/On, then change its Amount from -100 dB until it sounds best. Keep it on Flat.

Monitor and dither. Dither is noise added when the word length is reduced, for example from 32-bit float to 24 or 16 bits. It turns the quantization error into plain, steady noise, so the error does not follow the signal as distortion; it does nothing for the converter. Mozzaik Monitor adds noise for the converter itself: the noise has to reach the input of the delta-sigma modulator to break up its idle patterns. On export the two can work together: Mozzaik Monitor first, then Mozzaik Dither.