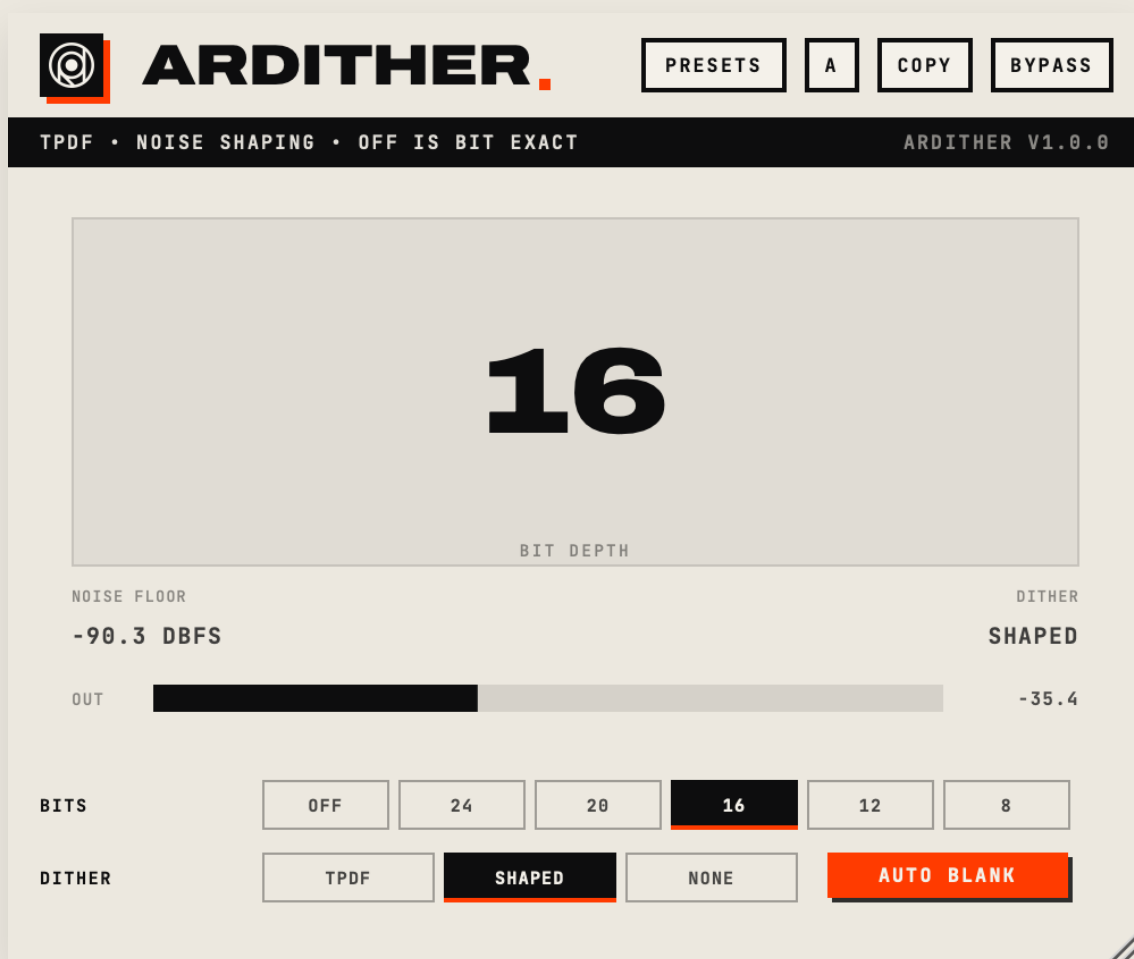


ARDITHER

DITHER AND BIT DEPTH



VERSION

1.0.0

FORMATS

AU • VST3

PLATFORMS

macOS • WINDOWS

DOCUMENT

USER GUIDE

01 WHAT IT DOES AND WHY

When a recording is reduced to 24 or 16 bits, what appears is rounding error – and that error is *related to the signal*. On quiet passages it is heard as a harsh, separate distortion rather than as noise.

Dither is a small amount of noise added before the rounding. It makes the error independent of the signal: the distortion becomes noise. The ear ignores a steady noise floor far more easily than a distortion that moves with the music. Measured here on a very quiet tone: the harmonic content drops by **19.0 dB** when TPDF is switched on.

At OFF the audio is untouched, sample for sample – the difference is exactly 0.000, measured on every build.

02 INSTALLING

macOS

Run ARDITHER Installer.pkg. Signed and notarised by Apple, so it opens normally.

Windows

Run ARDITHER Installer.exe. The plugin goes to the shared VST3 folder. SmartScreen may warn you once: More info, then Run anyway.

Where it goes in the chain

Last. Anything after it – even a gain change – undoes the rounding it just did. Requirements: macOS 10.13 or newer, Intel or Apple Silicon. Windows 10 or newer, 64-bit.

03 PARAMETERS

CONTROL	RANGE	DEFAULT	WHAT IT DOES
BITS	OFF / 24 / 20 / 16 / 12 / 8	OFF	The target depth. OFF passes the audio untouched – that is the default on purpose, so inserting the plugin never changes anything until you ask it to. 12 and 8 are there for character, not for delivery.
DITHER	TPDF / SHAPED / NONE	TPDF	TPDF is the one that measures correctly: the noise floor is flat and does not move with the signal. SHAPED is the same dither with the noise pushed away from 3 kHz, where the ear is most sensitive. NONE is plain truncation – it is here so you can hear the difference, not to be used.
AUTO BLANK	on / off	on	Stops adding dither to digital silence. Without it, the gaps between tracks on an album carry an audible noise floor.

04 MEASURED

OFF

0.000

Largest sample difference over 300 blocks of noise with BITS at OFF. Exactly zero.

DITHER WORKS

19.0 dB

Drop in harmonic content on a tone only 2.5 steps tall, between plain truncation and TPDF. This is the whole point of dither, stated as a number.

NOISE FLOOR

-96.4 dBFS

At 16 bits with TPDF, against a theoretical -96.3 dBFS. That theory is one step per two – the dither and the rounding error together, not the dither alone.

QUANTISATION

exact

Every output sample sits on a step of the chosen depth, at 16 and at 8 bits.

SHAPING

0.9 → 5.2 %

Share of the noise above 8 kHz, TPDF against SHAPED.

AUTO BLANK

0.000

LATENCY

0 samples

PROCESSOR

0.01 %

05 SUPPORT

Questions and bug reports: Instagram @ajanssrecords. Please include your operating system, your DAW and its version, the plugin format, and the version shown in the top right.

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