DGR Digital Degrader

User Guide | Parish Audio

Lo-fi digital degradation for vintage sampler texture, bitcrushing, unstable converters, and broken digital effects.



Product page: https://parishaudio.com/products/dgr-digital-degrader

DGR Digital Degrader is designed to shape **how digital audio falls apart**. Along with bit-depth and sample-rate reduction, DGR gives you direct control over jitter, aliasing, quantization style, drive, noise, dither, and six Character modes that alter the processing behavior itself.

1. Quick Start

- **Insert DGR** on drums, synths, loops, vocals, guitars, or any track you want to degrade.
- **Choose a Character mode.** Clean is the most controlled starting point; Sampler, 8-Bit, 16-Bit, DAC, and Broken add progressively different kinds of digital coloration.
- **Set Bits and Rate.** Lower Bits for coarser amplitude resolution and lower Rate for more obvious sample-and-hold stepping.
- **Shape the edges with Jitter and Alias.** Jitter destabilizes the sample clock; Alias determines how much raw high-frequency content reaches the reduced sampling stage.
- **Add Drive, Noise, Dither, and a Quantize mode** to change the texture and behavior of the degradation.
- **Use Mix and Output** to blend the effect and level-match it against bypass. Use Power for final A/B checks.

2. How DGR Works

DGR uses a digital-degradation signal path rather than a single "crusher" control. The input can be driven into a Character-specific front end, filtered or left more exposed according to Alias, captured by a reduced and optionally unstable sample clock, quantized to the selected bit depth, and then reconstructed with Character-specific filtering and coloration. Noise, Mix, and Output are applied later in the chain.

The six Character modes change real processing behavior - including filtering, reconstruction, nonlinear response, jitter/noise emphasis, and in some modes companding, asymmetry, or clock faults. They are not simply snapshots of the visible knobs.

3. Controls

Control	Range / Default	What it does
Character	Clean / Sampler / 8-Bit / 16-Bit / DAC / Broken	Selects a processing profile that changes filtering, reconstruction, nonlinear coloration, and the way instability/noise are emphasized.
Bits	1-24 bit (default 12)	Sets quantization resolution. Higher settings retain more detail; low settings create obvious stair-stepping, distortion, and digital crunch.
Rate	250 Hz-96 kHz (default 12 kHz)	Sets the effective sampling clock. Lower values hold samples longer and create more obvious downsampling. The effective maximum is capped by the host sample rate.
Jitter	0-100% (default 0%)	Randomizes the spacing of sample-clock events. Higher values make the degradation less regular and more unstable. Character modes can change the effective intensity.
Alias	0-100% (default 55%)	Controls how strongly the signal is filtered before and reconstructed after rate reduction. Lower settings are cleaner and more filtered; higher settings allow more raw aliasing and metallic foldback.
Drive	0 to +24 dB (default 0 dB)	Applies gain before the digital reduction and Character front end. It is intended to create overload and density rather than act only as a volume control; DGR partially compensates level after the degraded stage.
Noise	OFF / -96 to -24 dB (default OFF)	Adds an intentional converter/hardware-style noise floor. Unlike dither, Noise is an audible character control and can remain present even when the input is silent.

Quantize

Round selects the nearest quantization level and is the most conventional, symmetric mode. **Trunc** drops the signal toward the next lower magnitude step, producing a slightly different edge and error pattern. **Shift** uses a half-step-shifted grid while retaining a true zero region around silence, giving the quantizer a different texture.

3. Controls (continued)

Control	Range / Default	What it does
Dither	On / Off (default Off)	Adds low-level randomization before quantization to change the way quantization error behaves. DGR deliberately reduces dither strength at very low bit depths so it remains useful instead of becoming overwhelming.
Mix	0-100% (default 100%)	Blends the dry and degraded signals. Lower settings are useful for parallel-style texture and subtle finishing.
Output	-24 to +12 dB (default 0 dB)	Final gain after the dry/wet blend. Use it to level-match processed and bypassed audio.
Power	On / Off (default On)	Engages or bypasses processing with a short smoothed transition.

4. Character Modes

Mode	Character
Clean	The most controlled digital-reduction path. Minimal added coloration and the cleanest reconstruction behavior.
Sampler	Filtered, colored degradation inspired by older sampling hardware. Adds gentle companding, more reconstruction character, and a softer converter-noise texture.
8-Bit	Rougher low-resolution processing with stronger jitter/noise emphasis, mild overload, and slight asymmetry.
16-Bit	Cleaner early-digital character with reduced jitter/noise emphasis and mild overload coloration.
DAC	Converter and reconstruction coloration with stronger post-filter character, overload, slight companding, and a softer filtered noise texture.
Broken	The least stable mode. Adds stronger jitter/noise emphasis, nonlinear asymmetry, occasional clock-slip behavior, and signal-dependent digital roughness.

Important: Character modes do not simply move the visible controls. For example, two modes can use the same Bits, Rate, and Jitter settings and still sound different because their filtering, reconstruction, nonlinear response, and internal scaling differ.

5. Visual Feedback

The center display is a **conceptual visualization** of digital degradation, not a live waveform analyzer. The dim reference trace represents a smooth source waveform; the amber stepped trace illustrates how the current degradation settings would affect it.

- **Bits** changes the vertical resolution of the amber trace.
- **Rate** changes the horizontal sample spacing and number of sample holds.
- **Jitter** makes those sample intervals irregular.
- **Character** changes the deterministic visual pattern used for the jitter display. Alias, Drive, Noise, Dither, Mix, and Output are not intended to be precision-metered by this display.

6. Practical Workflows

Drums and Drum Machines

- DGR is especially effective on drums because short transients make bit depth, sample-rate reduction, and aliasing easy to hear.
- Start with 8-Bit or Sampler. Try 8-12 Bits and a Rate between roughly 8-20 kHz, then raise Alias for more edge.
- Add a few dB of Drive to make kicks and snares hit harder into the digital stage. Lower Mix if you want to keep the original transient underneath.

Vintage Sampler / Lo-Fi Loops

- Start with Sampler Character and moderate reduction rather than immediately going extreme.
- Try 10-14 Bits, 12-24 kHz Rate, low Jitter, and lower-to-moderate Alias for a more filtered vintage-digital sound.
- Use Noise sparingly to suggest converter or hardware floor, and Dither when you want a smoother low-level quantization texture.

Subtle Early-Digital Texture

- Use 16-Bit Character, relatively high Bits and Rate, low Jitter, and modest Alias.
- Blend with Mix around 30-60% when you want the effect to be felt more than obviously heard.
- Level-match with Output before deciding whether the coloration is helping.

Vocals, Guitars, and Synths

- Sampler and DAC are useful starting points when you want color without immediately turning the source into an obvious special effect.
- Keep Bits and Rate moderate, then use Alias and Drive to decide whether the result feels smoother, crunchier, or more converter-like.
- Parallel Mix settings can preserve intelligibility and pick attack while adding digital texture around the original.

Broken / Experimental Sound Design

- Choose Broken, lower Bits and Rate, then increase Jitter and Alias for unstable clocking and raw digital edges.
- Drive can make the faults react more aggressively to the source. Extreme settings can change level dramatically, so use Output for comparison and headroom.
- Broken itself is designed to remain quiet at digital silence; if you hear a steady floor, check the Noise control.

7. Factory Presets

Preset	Suggested use / character
Default	Neutral starting point: Clean, 12-bit, 12 kHz, no Jitter, moderate Alias.
Vintage Sampler	Filtered sampler-style degradation with moderate bit/rate reduction, gentle Drive, Dither, and restrained noise.
8-Bit Drums	Aggressive 8-bit drum crunch with stronger Alias and Drive.
Early Digital	Cleaner 16-bit-style early-digital texture with higher Rate and low instability.
Crunchy DAC	DAC coloration with lower resolution, Shift quantization, Drive, and moderate jitter/aliasing.
Broken Clock	Unstable Broken-mode clocking with low resolution, high Jitter/Alias, and audible noise.
Lo-Fi Vocal	Sampler-style vocal texture with partial Mix for a less destructive result.
Drum Machine	Punchy 8-Bit character tuned for drum-machine style crunch.
Subtle Digital Age	Gentle 16-Bit coloration with high Rate, low Alias/Jitter, Dither, and a 45% wet blend.
Total Data Loss	Extreme Broken-mode destruction with 4-bit resolution, very low Rate, maximum Alias, and high Jitter.

8. Presets, Undo, and Exact Value Entry

DGR supports factory presets and user presets. User presets can be saved, loaded, renamed, and deleted. Parameter changes are integrated with the Parish Audio Undo/Redo system, and edits mark the current preset as modified.

The numeric readouts for the knobs are editable. Click a value, type the desired number, and confirm the edit. Rate accepts Hz or kHz-style entry, and Noise can be returned to its true OFF state at the bottom of its range. Double-clicking a knob returns it to its default value.

9. Troubleshooting and Setup Tips

Symptom	What to try
The result is too harsh or metallic.	Lower Alias, raise Rate or Bits, reduce Drive, or move to Clean / 16-Bit / Sampler Character.
The result is too dark or filtered.	Raise Alias or Rate. Lower Alias intentionally uses more anti-alias/reconstruction filtering.
I hear noise even when the track is stopped.	Check the Noise control. Noise is an intentional hardware/converter floor and can remain audible with no input. Turn it fully down until the display reads OFF.
Broken mode seems noisy.	Broken adds signal-dependent roughness and clock faults, but it should not create a constant hiss at digital silence on its own. Check Noise first.
Dither barely changes the sound.	That can be normal. Dither changes quantization error and low-level texture; it is not designed to behave like the audible Noise control.
Changing Rate above my session sample rate does not change anything.	The Rate parameter can display up to 96 kHz, but the effective processing rate is capped by the host sample rate.
The effect is too obvious.	Raise Bits and Rate, reduce Jitter/Alias/Drive, choose a cleaner Character, or lower Mix to blend more dry signal.
The effect is not obvious enough.	Lower Bits and Rate, raise Alias, add Drive, or try 8-Bit / DAC / Broken Character.
The processed version only sounds better because it is louder.	Use Output to match the bypassed level before comparing.
I want completely unprocessed audio.	Turn Power off or set Mix to 0%.

A note about extreme settings

Very low bit depths and sample rates are intentionally nonlinear and stepped. At settings such as 1-4 Bits or very low Rate, large changes in waveform shape, transient detail, and apparent level are expected. Use Mix and Output to keep those effects under control when needed.

10. Technical Reference

Control	Range	Default	Function
Power	On / Off	On	Smoothed processing bypass.
Character	6 modes	Clean	Selects the internal degradation profile.
Bits	1-24 bit	12 bit	Quantization resolution.
Rate	250 Hz-96 kHz	12 kHz	Effective sample clock; capped to host sample rate.
Jitter	0-100%	0%	Random sample-clock interval variation.
Alias	0-100%	55%	Anti-alias / raw-input and reconstruction balance.
Drive	0 to +24 dB	0 dB	Pre-degradation drive and overload.
Noise	OFF / -96 to -24 dB	OFF	Intentional converter/hardware noise floor.
Quantize	Round / Trunc / Shift	Round	Selects the quantization grid behavior.
Dither	On / Off	Off	Adds low-level randomization before quantization.
Mix	0-100%	100%	Dry/wet blend.
Output	-24 to +12 dB	0 dB	Final output gain.

Channel layouts: mono and stereo. DGR is an audio processor and does not use MIDI. Structural changes to Character, Bits, Quantize, and Dither use a short internal transition to reduce switching clicks, while continuous controls are smoothed.

11. Product and Support

For the latest product information, downloads, and updates:

Product page: https://parishaudio.com/products/dgr-digital-degrader

Parish Audio website: https://parishaudio.com

Formats: Windows VST3; macOS VST3 and Audio Unit (AU).

Version: 1.0.0 **SKU:** 10030