

# GIF-Fi

## User Guide

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# 1 Introduction

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Ever wondered what might happen if you were to run your songs through GIF compression? Well wonder no more! Introducing GIF-Fi, the spectral bitcrusher you never knew you needed.

GIF-Fi builds a spectrogram of your sound, compresses it in true GIF fashion, then turns the mangled picture back into audio.

## 2 Installation

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### 2.1 System requirements

|                  | macOS                  | Windows                     |
|------------------|------------------------|-----------------------------|
| <b>System</b>    | macOS 12 or later      | Windows 10 or later, 64-bit |
| <b>Processor</b> | Apple Silicon or Intel | Any 64-bit                  |
| <b>Formats</b>   | VST3, AU               | VST3                        |
| <b>Host</b>      | Any VST3 or AU host    | Any VST3 host               |

### 2.2 Installing

Download GIF-Fi for your platform from [nyx-dsp.com](https://nyx-dsp.com). There's no installer. Unzip and copy the plugin into the folder for its format.

| Format               | Copy to                            |
|----------------------|------------------------------------|
| <b>VST3, Windows</b> | C:\Program Files\Common Files\VST3 |
| <b>VST3, macOS</b>   | /Library/Audio/Plug-Ins/VST3       |
| <b>AU, macOS</b>     | /Library/Audio/Plug-Ins/Components |

Restart your DAW, or rescan its plugins, and GIF-Fi will appear under NYX-DSP.

### 2.3 Activation

The first time GIF-Fi opens, it asks for a license key. Paste in the key from your purchase email and click **Activate**. Activation happens online; there's no iLok, no dongle and no account software running in the background.

Not bought it yet? Click **Start Free Trial** for seven days of the full plugin. If you buy a license later, enter it in the same place. There's nothing to reinstall.

Each license can be active on up to three machines at once. If you reach that limit, **Manage Activations** appears so you can release one of the others.

### 3 Quick start

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1. Put GIF-Fi on a track or bus and start in **Live** mode.
2. Turn **Colours** up. The readout shows how many colours are left, and fewer colours means harder, more obvious steps.
3. Use **Curve** to aim the crush at the quiet or loud parts of the sound, and **Dither** to soften the steps with noise.
4. Switch to **Windowed** to crush whole blocks at once, and set **GIF Width** to taste.
5. Blend with **Dry / Wet** and set the level with **Output**.

### 4 How it works

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The sound of GIF compression comes via a technique known as palette quantization. Each slice (Live) or bundle of slices (Windowed) has its brightness snapped to a handful of levels. The Colours control determines the number of quantization levels; Curve adjusts the brightness scale beforehand; Dither adds noise to smooth the hard steps.

There are other, lossless stages to GIF compression, but obviously we're looking for something that alters the signal, so these stages have not been included in the GIF-Fi process.

## 5 Controls



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### 5.1 Selectors

#### Mode

Toggles between two methods for building the GIF palette.

| Mode     | What it does                                                                |
|----------|-----------------------------------------------------------------------------|
| Live     | Real-time spectrogram crush, one slice at a time. Cleanest, lowest latency. |
| Windowed | Buffers a block of slices into a 2-D image, and crushes the lot together.   |

#### FFT Size

Spectrogram resolution: 512, 1024, 2048 or 4096. Larger gives finer frequency detail but is blurrier in time (and adds latency). Smaller gives sharper transients but coarser pitch.

#### Freq Scale

Determines how frequencies are distributed across the spectrogram.

| Scale         | Spacing                             |
|---------------|-------------------------------------|
| <b>Linear</b> | Evenly spaced in Hz                 |
| <b>Log</b>    | Spaced by octaves                   |
| <b>Mel</b>    | Spaced according to perceived pitch |

### Floor and Ceiling

Crop the frequency range the palette is built from.

### Dither

Same idea as dithering an image (or audio): softening hard edges with noise.

| Setting                | Sound                                                                 |
|------------------------|-----------------------------------------------------------------------|
| <b>Off</b>             | No dithering                                                          |
| <b>Ordered-Bayer</b>   | A fixed 4x4 Bayer pattern added before rounding                       |
| <b>Floyd-Steinberg</b> | Error diffusion; each slice's rounding error is carried into the next |

### Latency

Shows the delay GIF-Fi reports to your DAW, in samples and milliseconds. It grows with FFT Size, and again in Windowed mode.

## 5.2 The window

### Spectrogram

The scrolling spectrogram: newest slice on the right, oldest scrolling off the left. Bottom is low frequencies, top is high, with a Hz scale down the left edge. Brightness is magnitude (pop, pop!).

## 5.3 Knobs

### Colours

Sets how many colours the palette uses, from 256 down to 2. Turning it up leaves fewer colours and a harder crush. The primary GIF control.

### GIF Width (Windowed only)

The width of the buffered image (in slices) that the palette is built across. A wider palette is usually smoother, but adds latency.

### Curve

Adjusts the brightness of the image before crushing, emphasising quiet or loud sections of the source.

### Dry / Wet

Blend of processed and original signal.

### Output

Final level trim, -24 to +24 dB.

## 5.4 Panel

### Light / dark

Switches the panel between light and dark finishes.

### Manual

Congratulations! You've found the manual.