GRAILLON USER MANUAL

Version 2.1

Foreword

Thank you for using AUBURN SOUNDS® GRAILLON.

GRAILLON's goal is to lead your voice into uncharted territory.

Version 1 was mostly about the novel use of pitch tracking frequency shifting applied to speech. GRAILLON 2 is a more expressive solution for live voice changing.

You can now correct the tuning of a voice thanks to a few parameters. Clean, low latency pitch shifting was added. This algorithm has been carefully tuned for vocals.

The commercial version of GRAILLON now features the pitch-tracking modulation of version 1. This part is now more versatile with a new ring mode.

A bitcrusher has been added for drums and robots alike. It acts on the mantissa of a floating-point representation so that it doesn't depend on gain. As such, it sounds a bit different than the usual.

We strongly recommend you to purchase the full version in order to get the real experience of using GRAILLON 2.

You will use GRAILLON to:

- Correct the tuning of vocals
- Make a voice growl
- Shift the pitch of vocals neatly
- Reinforce the bass of monophonic pitched sounds
- Create robotic voices
- Make a more masculine voice
- and many other uses...

Compatibility

GRAILLON is available as a **32-bit and 64-bit VST2 / Audio Unit / AAX plugin** for Mac and Windows computers.

More specifically:

- **Windows** minimum supported version is **Windows Vista+**
- **macOS** minimum supported version is **OS X 10.8+**

GRAILLON has been tested on the most popular Digital Audio Workstations (DAW). If you find out any bugs, please report them at **contact@auburnsounds.com**.

Supported sampling rates range from 44100 kHz to 192 kHz.

Installation

For Windows users:

- VST: Copy the 32-bit VST or 64-bit VST DLL to your VST2 directory.

- AAX: **Auburn Sounds Graillon 2.aaxplugin** to your AAX directory:

  - `C:\Program Files\Common Files\Avid\Audio\Plug-Ins`

For Mac OS X users (VST2):

- Copy **Auburn Sounds Graillon 2.vst** to your VST2 directory:

  - `/Library/Audio/Plug-Ins/VST`

For Mac OS X users (Audio Unit):

- Copy **Auburn Sounds Graillon 2.component** to your AU directory:

  - `/Library/Audio/Plug-Ins/Components`

- **(High Sierra users)** Reboot your computer after the copy.

For Mac OS X users (AAX):

- Copy **Auburn Sounds Graillon 2.aaxplugin** to your AAX directory:

  - `/Library/Application Support/Avid/Audio/Plug-Ins`

Parameters

GRAILLON 2
Cheat sheet

Shifted voices
Mixes modulated copies of the Pitch-Corrected input voice. Modulation ratios are fixed fractions of detected pitch:1/4, 1/3, 1/3, 2/3.

What you don't see
Before any other processing, Graillon detects pitch and voicedness from input. The Pitch Detector prefers dry signals.

Mono Reduction
Graillon reduces the input signal to Mono. Selects the mix of Left / Right.

Modulation Selector
Chooses between Ring Modulation and Frequency Shifting as Pitch-Tracking Modulation.

Octave
Can Shift the fixed Modulation ratios by an octave up or down.

Lead Voice
How much the Pitch-Corrected, non modulated lead voice gets mixed.

Quantize
Rate of time quantization, expressed in samples.

Waveform View
Displays both the output waveform and status of the Pitch Correction. Left click + drag up/down to zoom.

Bit Reduction
Reduces the number of bits in floating-point mantissa. Therefore adapts to signal gain.

Low Cut Filter
Removes some bass energy **before** Pitch-Tracking Modulation. 12 dB/oct high-pass filter.

Inertia
Reduces Pitch Correction jumps by making chosen notes "stick". This may change actual melody. **Quite a critical setting.**

Dry Mix
Mixes a copy of the dry mono signal. Allows to make simple intervals in combination with the Pitch Shifter. Latency is fully compensated.

Static Pitch-Shift
Changes the pitch of input signal. The signal doesn't have to be a voice, but the algorithm is specialized for this kind of inputs.

Output Level
Gain of the output signal, after Dry Mix.

Dry / Wet
Makes every other parameter go back to normal continuously.

Preserve Formants
Applies original spectral envelope to the pitched signal.

Snap Range
How far the Pitch will be willing to be Corrected to stick on an enabled note. Default: jump up to 8 semitones.

Reference
Tunes the pitch of reference for note A6 (usually 440 Hz). Best left at default value.

Correction Amount
How much the Correction will change the Pitch. Most useful values: 0% and 100%.

Smooth
Makes Pitch Transition faster or more natural. Set to minimum for robot effect.

Virtual Keyboard
Sets enabled notes for Pitch Correction. This doesn't distinguish between octaves. You can force precise notes by sending MIDI input to Graillon. Secret: use SHIFT + click to rotate.

Voice only?
Graillon is designed for vocal input. Its pitch-shifting is tuned for voice. However, only Pitch-Tracking Modulation and Correction parts strictly requires a pitch.

Details

Non–speech input

Some customers use GRAILLON on non-speech input, like tiger roars. If you make any discovery of a new use case, please tell us about it at **contact@auburnsounds.com** .

No Stereo Support

In order to lower CPU requirements and support low buffer sizes, GRAILLON reduces your input signal to mono.

Latency

At 44100 Hz, GRAILLON has a latency of 1074 samples (24.3 ms).

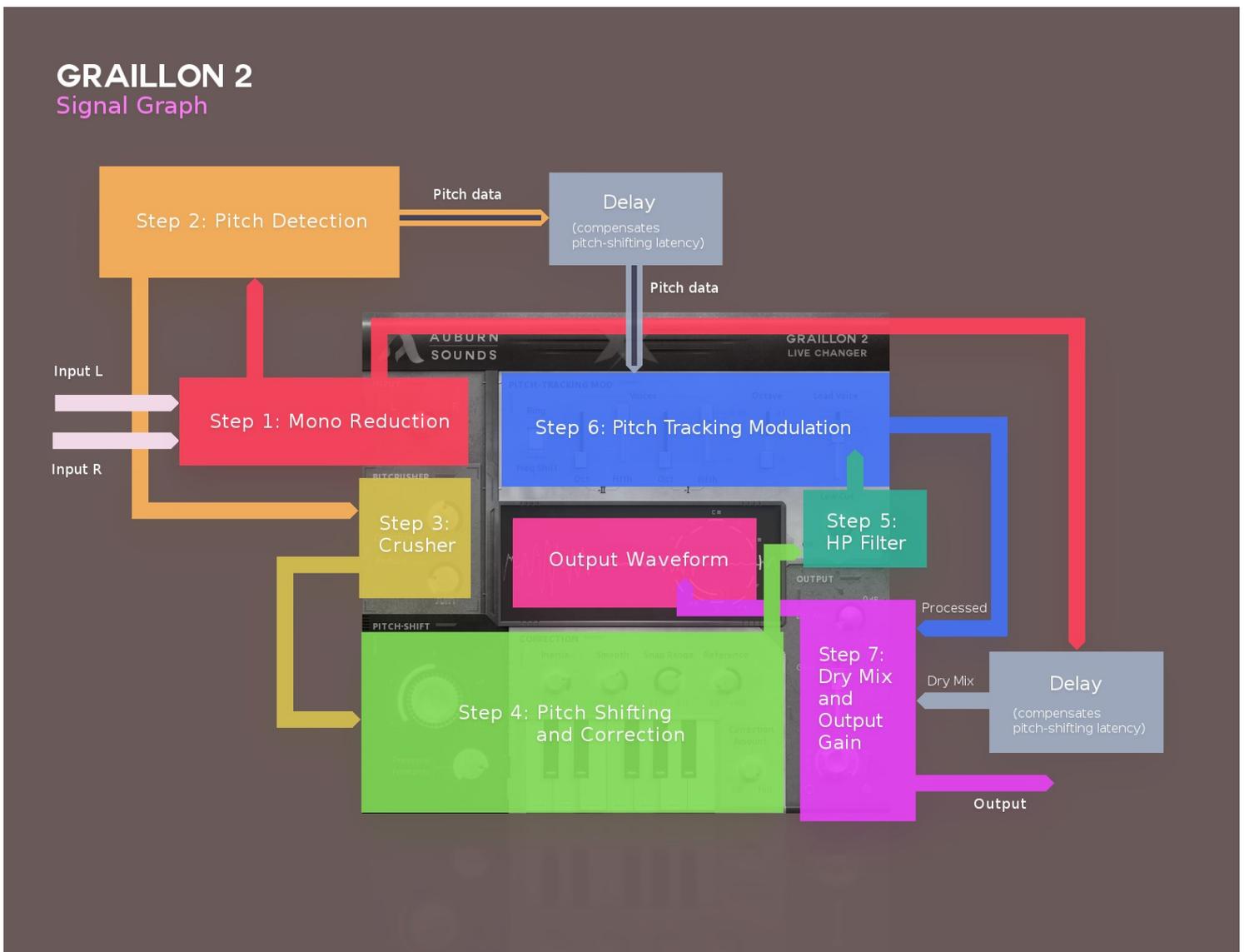At 48000 Hz, GRAILLON has a latency of 1074 samples (22.4 ms).

At 88200 Hz, GRAILLON has a latency of 2148 samples (24.3 ms).

At 96000 Hz, GRAILLON has a latency of 2148 samples (22.4 ms).

At 192000 Hz, GRAILLON has a latency of 4296 samples (22.4 ms).

Processing graph

Credits

GRAILLON is a work of love and many people provided valuable input. Hereby, I'd like to thank people who contributed to the effort.

Programming, UI, DSP

- Guillaume Piolat

Testers

- Denis Morin **https://soundcloud.com/youpidoumusic**
- Geoffrey Fernandez **https://graindolium.bandcamp.com/**
- Marie Charmoillaux **https://soundcloud.com/didou-mariecharmoillaux**
- Ryan Clough **https://soundcloud.com/escherbeat**
- Naoki Ohmori **https://soundcloud.com/naoki-ohmori**
- Sakima "Obelo" Richardson **https://soundcloud.com/mixed-by-sakima/**

Thanks

Céline Alary, Bruno Berthier, Céline Blanc, Maël Bosson, Stéphanie Cherruet, Charles Guillemet, Mickael Istria, Martin Kirchgessner, Quentin Sabah, and everyone who hosted me!

I'd also like to thank the D community for their continuous help and for being a friendly bunch.

Also thanks to all friends, family members, and supporters who didn't make it to the list. I'll never forget your support.

Legal Information

- Auburn Sounds ® is a registered trademark of Guillaume Piolat. (2015).
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- AAX® is a registered trademark of Avid Technology.

Technical Information

- GRAILLON is built based on the open-source framework **Dplug,** a wild alteration of Cockos WDL.

Changelog

Version 2.1

- **New Feature:** Right click on sliders in Frequency-shifting mode to invert the direction of the frequency shifting for this shifter.

- Add AAX Native and AAX AudioSuite support.

- Faster text drawing.

- Fixed MIDI input in Bitwig Studio.

- Fix crash in Vienna Ensemble Pro.

- Dropped support for Mac OS X 10.7.

Version 2.0

- Add automatic voice tuner.

- Add pitch-shifter.

- Add bit-crusher.

- Add new pitch-tracking ring modulation.

- Add the ability to shift the base octave of the shifters.

- Because of pitch-shifting latency is not 0 anymore.

- Reworked complete UI.

Version 1.2

- Fix crash in macOS Sierra upon instantiation, all hosts.

- Graillon now uses 2x less memory.

Version 1.1

- Graillon is now freemium.

- Now available in Audio Unit format.

- Faster and sharper UI.

- Graillon now uses 30% less memory.

- Fix Cubase crashes in Windows and OS X.

- Fix Audition crash when processing a mono sample.

- Fix Ableton Live crash when scanning plugin.

- Fix Apple Logic crash: threads would stay attached.

- Fix Audacity for Mac crash: was a multi-threading bug.

- Fix Digital Performer bug: no processing in Audio Unit.

- Fix pass-through of key presses to the host.

- Fix restoring state in Ableton Live.

- Fix random crash at opening, waveform was badly initialized.

- Fix slowness and partial update when UI is reopened.

- Changed the JPEG loader, 25% faster first UI load.

Version 1.0

Initial release.