



DistoFonic
Version 1.0
User Manual

DistoCore Audio Tools
<https://distocore.online>

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1

Introduction

Welcome and thank you for purchasing the DistoCore DistoFonic audio plug-in.

DistoFonic (Dirty Sound Destructor) is a dual-band distortion with filter, wave-shaper and equalizer control units.

It is aimed at hard electronic dance music (EDM) like hardcore, gabber, drum and bass and dubstep,

but it also gives your guitar tracks and synthlines an interesting, crispy sound.

1.1 System Requirements

🍏 MacOS:

OS Version: OS X 10.9 or later

CPU: modern CPU (Sandy Bridge or newer recommended)

DistoFonic is provided only as 64-bit bundle version.

🖥 Windows:

OS Version: Win 7, Win 8, Win 10 (latest Service Pack, 32/64-bit) or Win 11

CPU: modern Intel or AMD CPU

DistoFonic is provided as 32-bit and 64-bit VST DLL versions and as 64-bit VST3 version.

DistoFonic is not a standalone product, it requires a VST2/VST3 or an AU compatible host application software.

It is compatible with nearly all Digital Audio Workstations (DAWs).

1.2 Installation

DistoFonic is provided as encrypted ZIP package. You will find your password in the corresponding email. Unzip the ZIP package using your password.

After a successful installation please run your Digital Audio Workstation (DAW) and refresh/rescan plug-ins list.

1.2.1 MacOS

The MacOS ZIP package contains 64-bit AU/VST/VST3 bundles ready to use and a PKG installer for installing the AU/VST plug-ins on your Macintosh HD.

MacOs PKG Installer:

Right click on the PKG installer and click open, follow the wizard to install the Audio-Unit, VST and VST3 files to the default system folders on your Macintosh HD.

Manuall installation of MacOS 64-bit AU/VST/VST3 bundles:

Copy the VST [`*.vst`] content to:

`/Library/Audio/Plug-Ins/VST` (recommended)

or

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

Copy the Audio-Unit AU [`*.component`] content to:

`/Library/Audio/Plug-Ins/Components` (recommended)

or

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

Copy the VST3 [`*.vst3`] content to:

`/Library/Audio/Plug-Ins/VST3` (recommended)

or

`/Library/Audio/Plug-Ins/VST3`

1.2.2 Windows

The Windows ZIP package contains 32-bit/64-bit VST and 64-bit VST3 Windows DLLs ready to use and a SETUP executable for installing the audio plug-ins to your DAW/host directory.

Windows Installer:

Execute the windows executable and follow the wizard.

Windows VST DLLs (ready to use):

Simply copy the content to your VSTPlugIns host's directory.

Recommended VSTPlugIns installation directory is:

`C:\Program Files\Common Files\VST3`

1.3 Updates

The licensed DistoFonic version is valid up to (and including) next minor version. All updates are free of charge and the corresponding download link is sent via email.

For example:

If you buy DistoFonic version 1.0, you will get free updates for all versions up to and including DistoFonic 1.1.

DistoCore does not guarantee that this product will be maintained indefinitely.

1.4 FREE/limited version

A limited FREE version of the plug-in is available for download under the following link:

<https://distocore.online/downloads.html>

It offers limited functionality/features.

If you have already used the FREE version, it is recommended to uninstall it before installing the FULL licensed version.

2

User Interface

The User Interface as shown in figure 2.1 is divided into 3 tabs:

- Plug-In tab contains all UI controls for controlling the audio plug-in
- Scope tab visualizes the original input and processed output audio signal waveform
- About tab displays information about the Digital Audio Workstation (DAW), license and the plug-in itself

All units and their controls are described in chapter Units.

Waveform visualization in the Scope tab is described in the Scope chapter.

Information details are described in the About Tab chapter.



Figure 2.1: DistoCore DistoFonic 1.0 User Interface (GUI)

3

Signal Flow

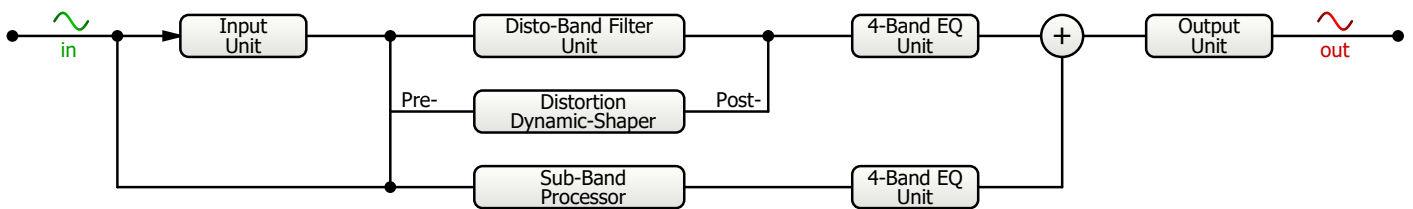


Figure 3.1: *DistoFonic Audio Signal Flow*

The signal flow direction as depicted in figure 3.1 goes from left to right this means:

The original audio signal is fed into the Input Unit 4.1.1, then it is processed through all plug-in units.

The Sub-Band and Disto-Band signals are mixed together in the Sub-/Disto-Band Processor mixer (+) and sent back to the DAW from the Output Unit 4.1.2.

4

Units

4.1 Input/Output Unit



Figure 4.1: *Input/Output Unit*

4.1.1 Input Unit

The Input Unit is the first processing unit in the signal flow 3.1 and it pre-processes the incoming audio signal by controlling its input level amount, DC-Offset, saturation and L/R stereo channel mixing mode.

- input volume "In-Vol" control knob controls input signal volume before any processing occurs (from $-\infty$ to 0.0dB)
- input "L/R" stereo mode switch changes between the following input stereo/mono modes:
 - ★ L/R: stereo (default: keeps input signal unchanged)
 - ★ R/L: inverse stereo (input signal channels are swapped)
 - ★ M: mono mix (converts input to MONO by mixing left and right channel)
 - ★ L/L: mono (converts input to MONO by copying left channel to right)
 - ★ R/R: mono (converts input to MONO by duplicating right channel to left)
- input "DC-Offset" control knob controls DC offset of the input signal, mouse double-click centers the knob and zeros the "DC offset" value

- input saturation "In-Sat" control knob saturates the input signal
- input saturation mode switch controls the different saturation modes:
 - ★ SOFT (subtle soft saturation)
 - ★ STD (classic standard saturation)
 - ★ HARD (aggressive hard saturation)

4.1.2 Output Unit

The Output Unit is the last processing unit in the signal flow 3.1 to post-process the outgoing audio signal with L/R channel panorama, saturation, low-/high-pass filter, dry/wet mixing balance, limiter/clipper and output level amount.

- maximal signal level "RESET" button resets the computed maximal signal level, which is displayed on the right side (-0,1 dB in the example screenshot)
- "Pan" control knob controls the left/right stereo panning of the output signal
- output saturation "Out-Sat" control knob saturates the output signal
- output saturation mode switch controls the different saturation modes:
 - ★ SOFT (subtle soft saturation)
 - ★ STD (classic standard saturation)
 - ★ HARD (aggressive hard saturation)
- "LP/HP" control knob is used to apply the following filter to the output signal:
 - ★ 0.0-0.5 Low-Pass (10-20000Hz) knob goes from left to center
 - ★ 0.5-1.0 High-Pass (10-20000Hz) knob goes from center to right
 - ★ mouse double-click centers the knob and sets the "Dump/Expand" value back to 0.5
- "12dB/24dB" switch changes Low-Pass/High-Pass filter slope between 12dB and 24dB
- "Dry/Wet" mix control knob is used to blend the original/unmodified signal (dry) with the output/modified signal (wet)
- high quality output filter mode "HQ-FIL" switch toggles between the following bessell filter operating modes for final signal processing and DC offset suppression:
 - ★ HQ-FIL. (inactive/greyed-out)
 - ★ HQ-FIL1 (20Hz-20kHz)
 - ★ HQ-FIL2 (40Hz-20kHz)
- "Limiter Threshold" control knob controls the output clipper/limiter threshold level
- limiter mode switch changes between the following output clipper/limiter modes:

- ★ SOFT (soft clipper characteristic)
- ★ STD (standard limiter)
- ★ HARD (hard limiter)
- output volume "Out-Vol" control knob is used to adjust the output signal volume ($-\infty$ to 0.0dB dependent on the parameter settings)
- "OFF/8x" oversampling button de-/activates 8x oversampling for all distortion/saturation processing units
- "BYPASS" FX button bypasses all DistoFonic modifications used for distorting the audio signal

4.1.3 Program/Preset Browser

- program "SAVE" button opens a file browser and saves current parameter settings to a *.DC or a *.FXP program file
- program "LOAD" button opens a file browser and loads a previously stored program from a *.DC or a *.FXP program file
- factory preset browser displays the current program name and allows the user to browse the factory presets

4.2 Disto-Band Filter Unit



Figure 4.2: *Disto-Band Filter Unit*

Pre-filter drive character and tone shaping with the help of two balanced filters.

- filter unit on/off switch activates or deactivates the unit
- filter "In-Drive" control knob drives the input signal of the filter unit before filtering the signal
- filter "MODE" 1 switch changes the left side filter between the following filter modes: RBJ-LP (Low-Pass), RBJ-HP (High-Pass), RBJ-BP1 (Band-Pass), RBJ-BP2 (Band-Pass), RBJ-BP3 (Band-Pass), RBJ-BS (Band-Stop)

- filter 1 vs. 2 cross-fader mixes filtered signal 1 (left) and filtered signal 2 (right)
- filter "MODE" 2 switch changes the right side filter between the following filter modes: LP 6dB/12dB/18dB/24dB (Low-Pass), HP 6dB/12dB/18dB/24dB (High-Pass)
- filter "Transition" switch/knob controls the transition speed of the filter cutoff/resonance knobs
- filter "Resonance" control knob controls resonance (LP/HP) or Q value (BP/BS) of both filters (left+right)
- filter "Cutoff" knob controls the cutoff frequency (LP/HP) or center frequency (BP/BS) of both filters (left+right)

4.3 Distortion and Dynamic Shaper Unit



Figure 4.3: *Distortion and Dynamic-Shaper Unit*

4.3.1 Distortion Unit

Distortion: Main distortion from subtle saturation to extreme distortion/overdrive with different shaping algorithms.

- distortion FX on/off switch activates or deactivates the unit
- "PRE" button activates the pre-distortion signal path, so that the audio signal is distorted before it is fed into the filter unit, as shown in the signal flow 3.1
- "POST" button activates the post-distortion signal path, as shown in the signal flow 3.1
- distortion curve preview display shows the application of the selected distortion/dynamic shaper curve to a sine-wave
- "BitCrash" control knob is used to reduce the amplitude resolution that means it directly affects the quantization (for example: it converts a 32-bit signal to a 4-bit signal)
- "SmpFreq" control knob reduces the sample rate (sampling frequency)
- "Gate" control knob defines a threshold level for the noise-gate algorithm

- distortion "Amount" control knob determines the amount of distortion
- distortion/dynamic shaper curve display draws the selected distortion/dynamic shaper curve or shape
- distortion mode switch activates one of the following operation modes:
 - ★ SHAPE waveshaper operating mode: applies the selected distortion curve shape
 - ★ BOOST boosts the signal and applies the selected distortion curve shape
 - ★ LOUD performs extreme signal boost and applies the selected distortion curve shape
- distortion curve interpolation "INTERP" switch is used to switch between the following curve interpolation modes:
 - ★ no interpolation (8-bit curve)
 - ★ linear interpolation
 - ★ cosine interpolation
 - ★ cubic interpolation
 - ★ hermite (highest quality)
- polarization switch changes the distortion polarization to one of the following polarization modes:
 - ★ BOTH (effect is applied to all signal values)
 - ★ POS (effect is applied to positive signal values)
 - ★ NEG (effect is applied to negative signal values)
- "RESTORE" button restores the curve from internal memory
- distortion curve preset browser buttons are used to browse the built-in distortion curves
- distortion curve name display shows the name of the selected distortion curve

4.3.2 Distortion Curve Editor

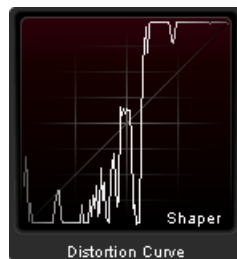


Figure 4.4: *Distortion Curve Display*

The distortion curve can be drawn or modified using Left-Mouse-Button (LMB) on the Distortion Curve Display 4.4.

Changes are directly applied and can be later stored by saving the corresponding program

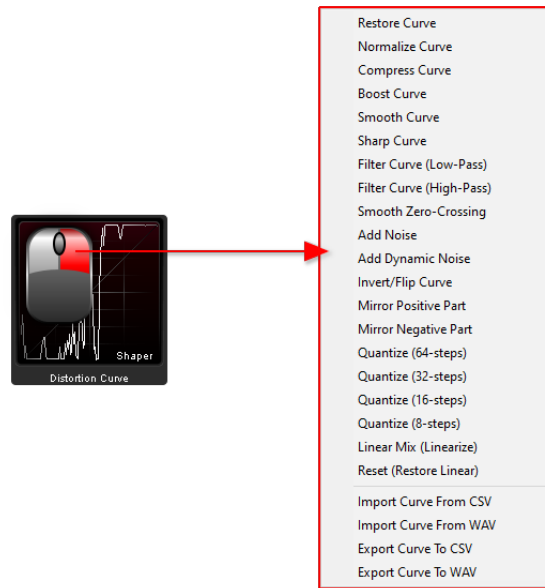


Figure 4.5: *Distortion Curve Display Context Menu*

as *.FXP or *.DC program file 4.1.3.

Furthermore DistoFonic offers different processing functions accessible via a context-menu. The distortion curve context-menu is displayed by a Right-Mouse-Button (RMB) on the distortion/dynamic shaper curve display 4.5.

It offers the following processing functions:

- Restore Curve: restores distortion curve
- Normalize: computes and applies a constant amount of gain to bring peak amplitude to the maximum target value 0.0dB
- Compress: reduces the dynamic range of the distortion curve
- Boost: amplifies the distortion curve by boosting factor
- Smooth Curve: smooths distortion curve
- Sharp Curve: sharpens distortion curve
- Filter Curve (Low-Pass): applies a Bi-Di Low-Pass filter to distortion curve (this type of filter reduces aliasing in noisy/hard-edge distortion curves)
- Filter Curve (High-Pass): applies a Bi-Di High-Pass filter to distortion curve
- Smooth Zero-Crossing: fades in/out distortion curve values, so that the curve center becomes zero value
- Add noise: adds white-noise to distortion curve

- Add Dynamic noise: adds dynamic white-noise to distortion curve, the noise value is scaled according to the signal value
- Invert/Flip Curve: inverts distortion curve values
- Mirror Positive Part: replaces negative distortion curve part with mirrored positive values
- Mirror Negative Part: replaces positive distortion curve part with mirrored negative values
- Quantize (64-steps): algorithmic quantization using curve mapping to 64 discrete steps
- Quantize (32-steps): algorithmic quantization using curve mapping to 32 discrete steps
- Quantize (16-steps): algorithmic quantization using curve mapping to 16 discrete steps
- Quantize (8-steps): algorithmic quantization using curve mapping to 8 discrete steps
- Linear Mix: performs a 50%/50% linear mix
- Reset (Restore Linear): restores the "linear" distortion curve

A distortion curve can be also imported from a CSV or WAVE file via the "Import Curve From ..." context-menu action.

The (modified) distortion can be exported for further processing via the "Export Curve To ..." to a CSV or WAVE file context-menu action.

4.3.3 Dynamic Shaper Unit

Dynamic Shaper: Further distortion with help of dynamically controllable shaping algorithms.

- distortion FX on/off switch activates or deactivates the unit
- distortion/dynamic shaper curve preview display shows the application of the selected distortion/dynamic shaper curve to a sine-wave
- distortion/dynamic shaper curve display draws the selected distortion/dynamic shaper curve or shape
- dynamic shaper "Amount" control knob is used to set the dynamic shaper level
- dynamic shaper "Width" control knob controls the width of the selected shape
- dynamic shaper "Shape" switch/knob changes the shape type to one of the following: Sine, Triangle, Pulse, Saw, Sine2, Pulse2, Noise1, Noise2, DynNoise
- polarization switch changes the dynamic shaper polarization to one of the following polarization modes:

★ BOTH (effect is applied to all signal values)

- ★ POS (effect is applied to positive signal values)
- ★ NEG (effect is applied to negative signal values)
- "MODE" switch changes the dynamic shaper processing mode to one of the following:
 - ★ Shaper (shaper only)
 - ★ SatShaper (saturate and shape)
 - ★ BoostShaper (boost input signal and apply shape)
 - ★ BoostSatShaper (boost input signal, saturate and apply saturated shape)

4.4 Equalizer unit



Figure 4.6: 4-Band Equalizer Unit

Simple four band equalization for Sub- and Disto-Band with Low-Pass/High-Pass filtering. The Sub- and Disto-Band equalization can be switch using the corresponding tab buttons.

- equalizer unit on/off switch activates or deactivates the unit
- "Bass" control knob is used to set the amount of the 250Hz bass band (Low Shelf filter), mouse double-click centers the knob
- "Lo-Mid" control knob is used to set the amount of the 750Hz low mid range band, mouse double-click centers the knob
- "Hio-Mid" control knob is used to set the amount of the 2000Hz high mid range band, mouse double-click centers the knob
- "High" control knob is used to set the amount of the 4000Hz high band (High Shelf filter), mouse double-click centers the knob

4.5 Sub-/Disto-Band Processor unit

The Sub-/Disto-Band Processor splits the audio signal into two separate bands:

- sub-band: is dedicated for the processing of the sub-band aka lows of the output signal

- **disto-band:** is dedicated for the processing of the disto-band, which contains the complex/ user-defined harmonics of the output signal

For the sub-band signal, the input signal is used directly without preprocessing, while the disto-band signal is already processed by several units, as shown in the signal flow 3.1. The cutoffs of the band filters can be flexible adjusted by using the Low-Pass filter for the sub-band and the High-Pass filter for the disto-band.

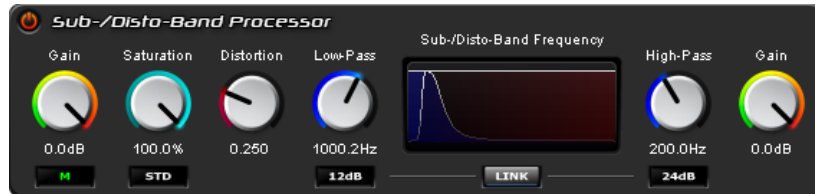


Figure 4.7: *Sub-Band Processor Unit*

4.5.1 Sub-Band Unit

- Sub-/Disto-Band Processor on/off switch activates or deactivates the unit
- sub-band volume "Gain" control knob controls sub-band signal volume (from $-\infty$ to 0.0dB)
- sub-band "L/R" stereo mode switch changes between the following input stereo/mono modes:
 - ★ L/R: stereo (default: keeps input signal unchanged)
 - ★ R/L: inverse stereo (input signal channels are swapped)
 - ★ M: mono mix (converts input to MONO by mixing left and right channel)
 - ★ L/L: mono (converts input to MONO by copying left channel to right)
 - ★ R/R: mono (converts input to MONO by duplicating right channel to left)
- sub-band saturation "Saturation" control knob saturates the sub-band signal
- sub-band saturation mode switch controls the different saturation modes:
 - ★ SOFT (subtle soft saturation)
 - ★ STD (classic standard saturation)
 - ★ HARD (aggressive hard saturation)
- sub-band distortion "Distortion" control knob applies the specified amount of the currently selected distortion in the Distortion Unit 4.3
- sub-band filter "Cutoff" knob controls the cutoff frequency of the sub-band
- sub-band filter slope switch changes the sub-band Low-Pass filter slope between 6dB, 12dB, 24dB and 48dB

4.5.2 Disto-Band Unit

- disto-band filter "Cutoff" knob controls the cutoff frequency of the disto-band
- disto-band filter slope switch changes the disto-band High-Pass filter slope between 6dB, 12dB, 24dB and 48dB
- disto-band volume "Gain" control knob controls disto-band signal volume (from $-\infty$ to 0.0dB)

5

Scope

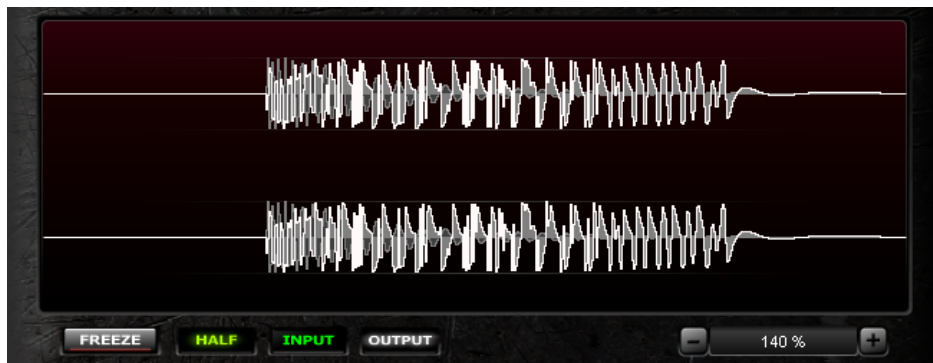


Figure 5.1: *DistoFonic Scope*

The Scope tab is a simple input and output signal waveform visualizer. In the scope window the user can quickly compare the input and output signal amplitude.

- "FREEZE" button freezes the current scope view
- waveform mode switch changes between the following waveform drawing modes:
 - ★ HOLLOW draws only the waveform envelope
 - ★ HALF draws the waveform envelope and fills the corresponding amplitude region with a gray color
 - ★ FILLED fills the waveform with gray (input) and white (output) color
- INPUT button activates input signal monitoring
- OUTPUT button activates output signal monitoring
- ZOOM control zooms in and out the waveform area (mouse scroll wheel)

6

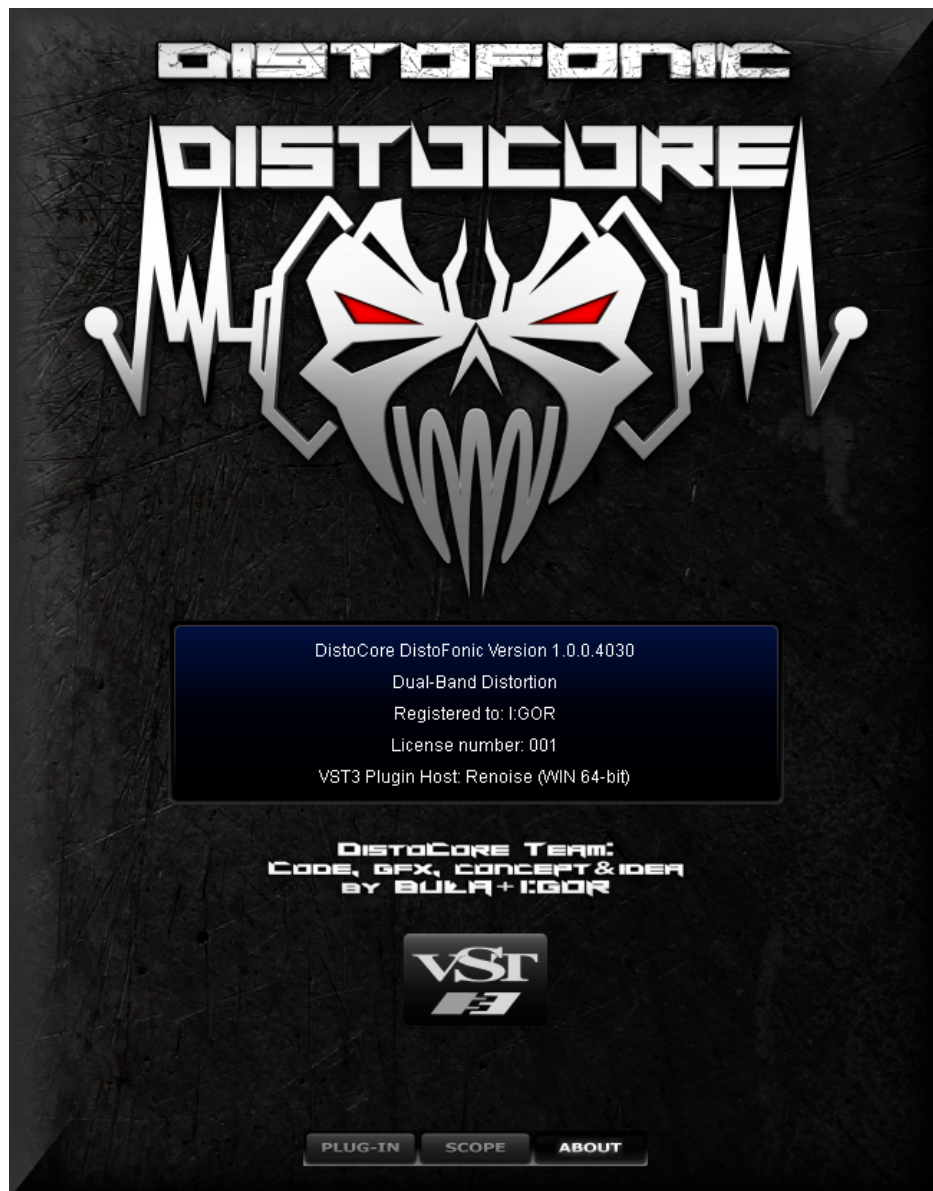
About Tab

The About Tab Scope tab shows the plug-in version, user registration, host and operation system information.

You will find your registred artist name and license number here.

Furthermore a logo of the utilized plug-in technology is displayed in the bottom part of the tab.

Note: The eyes of the DistoCore logo are VU meters.

Figure 6.1: *DistoFonic About Tab*

7

License Agreement

Please read this chapter before installing the software.

7.1 End User License Agreement

The use and redistribution of "DistoCore DistoFonic audio plug-ins" ("Software") is subject to the following conditions:

1. All copyrights to the Software are exclusively owned by the DistoCore team.
All rights not expressly granted here are reserved by the DistoCore team.
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VST and VST3 are technologies and trademarks of Steinberg Media Technologies GmbH.

Audio Unit is a technology and trademark of Apple Computers, Inc.

DistoCore DistoFonic uses the C++ DSP library written by Vinnie Falco.

7.3 Credits

DistoFonic concept and audio processing chain by Rene Kuschnick (Gade Systems), Igor Wilkoński and Wojtek Przysaś.

The plug-in is designed and developed by Wojtek Przysaś.

Credits go to:

Dj Stinger (CSR), The Reaper (AAR), Koney Industrial, Dj Akira, Dj Waxweazle, Dj R.Shock, Splatter (KTS), Tim SplinterCell, Egodiscordia, Doctor Terror and Smash and of course to all DistoCore audio plug-ins users, who have sent us constructive feedback.

Contact/Support

For any kind of issue or improvement suggestion feel free to contact us through our website:

<https://distocore.online>

E-mail: [distocore \[at\] gmail.com](mailto:distocore@gmail.com)

KVR Audio - DistoCore developer:

<https://www.kvraudio.com/developer/distocore>

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