

Contortion-24

Saturation and Distortion Plug-In from Gramotech

What is Contortion-24?

Contortion-24 is a saturation and distortion plug-in from Gramotech. Contortion-24 features many unique effects that can be used to add colour and character to a sound through the three main effect categories: distortion, saturation, and waveshaping. The distortion effects add a lot of colour and grunge to a sound, the saturation effects are more subtle and add acoustic characteristics to a sound, and the waveshaping effects completely transform the sound to something wild and wacky!

How do I install it?

1. Extract the installer from the *.zip* file downloaded from <https://gramotech.co.uk/>.
2. Run the installer and follow the instructions.
3. In some hosts (DAWs), you may need to rescan your plug-in folders for new plug-ins to appear. See the user manual of your host software for details.

How do I use it?

Add the plug-in to the appropriate track in your DAW. Through the drop-down menu on the UI, select an effect you would like to use (the effects are separated into categories to give an idea of how they might sound). Use the alpha and beta sliders to control the effect – the exact result of each slider depends on the selected effect, so you will likely want to experiment with them until you find the exact sound you're looking for. You can now fine-tune the effect by adjusting the output gain, dry/wet mix, and pan in the right-hand panel.

Interface

Becoming familiar with Contortion-24's interface is the fastest way to master it.

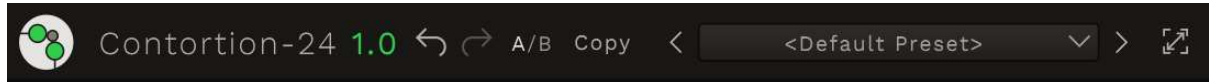


Contortion-24's interface is split into separate panels which each represent a certain aspect of the plug-in. The layout of the interface is designed to approximate the signal flow through the plug-in starting at the top-left and moving to the bottom-right.

The following chapters will walk you through each of Contortion-24's panels.

Header

The header bar displayed at the top of the plug-in contains widgets that can be used to alter the state of the current instance.



From left to right the widgets are:

- **Gramotech Logo** – Launches gramotech.co.uk in the default browser.
- **Title** – Displays the plug-ins name and major version.
- **Undo Button** – Undoes the last parameter change.
- **Redo Button** – Redoes the last parameter change.
- **A/B Button** – Switches between the A and B states (the current state is highlighted. In the image above, the current state is A).
- **Copy Button** – Copies the current parameters to the inactive state.
- **Previous Preset Button** – Changes to the previous preset in the list.
- **Presets Combo Box** – Used to change to a different preset or save the current state as a new preset.
- **Next Preset Button** – Changes to the next preset in the list.
- **Window Size Button** – Used to change between the 3 fixed window sizes (small, medium, and large).

Waveforms and Analyser

The waveforms and analyser are only displayed in the 'large' window size setting.

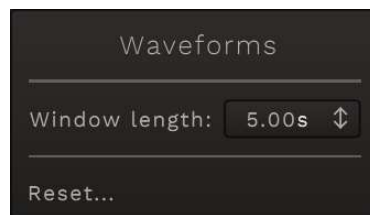
Only one or the other can be displayed at once. The active display can be changed by clicking the arrow button to the left or right of the current display.

Waveforms



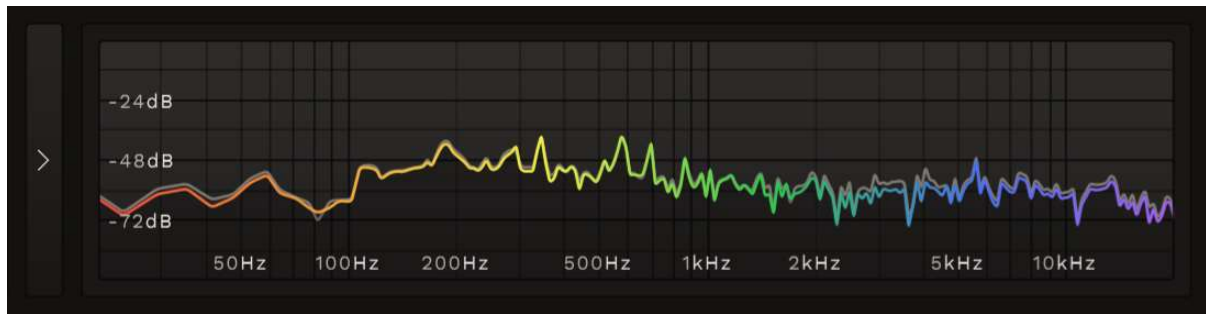
The waveforms panel shows the input and output of the current signal being passed through the plug-in. The waveforms are displayed as a mono mix of the given signal so if your sound is multichannel and has a lot of phasing, it may not be displayed accurately by these waveforms.

Right clicking the waveform will open the following settings menu:



- **Window length** – The length of the window which is displayed by the waveforms.
- **Reset** – Resets the above settings.

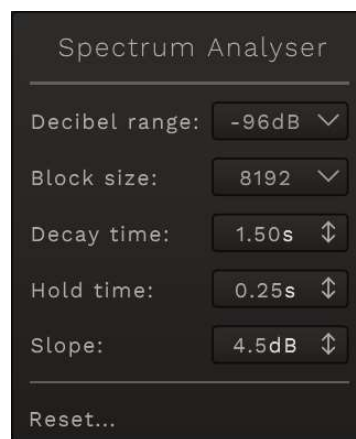
Analyser



The spectrum analyser panel also shows the input and output of the current signal but instead displays the frequency content of the signals. The analysers also show a mono mix of the signal and so may suffer the same inaccuracies as the waveforms.

The input spectrum is drawn in grey behind the coloured output spectrum. Differences between the two graphs indicate a boost or attenuation in frequency.

Right clicking the waveform will open the following settings menu:

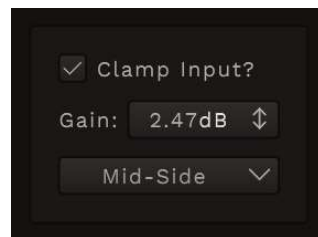


- **Decibel range** – The lowest decibel level displayed by the analysers (the maximum is always 0dB).
- **Block size** – The number of samples used to render the spectrum. Larger block sizes will give better precision in lower frequencies at the cost of poorer performance.
- **Decay time** – The time it takes for a peak to decay to -inf dB.
- **Hold time** – The time for which peaks are held before they start decaying.
- **Slope** – The amount of gain-per-octave applied across the spectrum (audio is unaffected, the slope is only applied to the display).
- **Reset** – Resets each of the above settings.

Input Panel

The input editor contains widgets for controlling how the input signal to the plug-in is treated before the main processing is applied.

Note that the following parameters are applied to the signal in the order that they are displayed in the panel. First the input signal is clamped to be between -1 and 1, then the input gain is applied (so the signal can now be greater than -1 to 1) and finally the encoding.



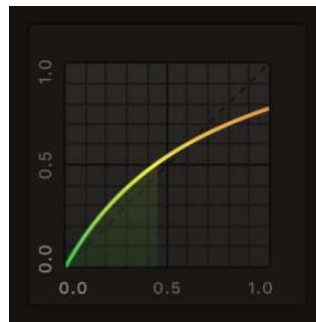
- **Clamp Input Button** – Toggles on/off the clamping of the input signal to -1 to 1.
- **Input Gain** – The amount of gain applied to the input. This gain is then reversed in the output.
- **Channel Layout Combo Box** – Changes how the input channels are encoded.
 - **Stereo** – Input channels are left untouched (assuming a stereo source).
 - **Mono** – Input channels are summed to a single signal (or left untouched if input only has one channel).
 - **Mid-Side** – Input channels are encoded to a mid-side signal which is then decoded again at the output to produce the expected stereo output (only available if input has more than 1 channel).

Transfer Function

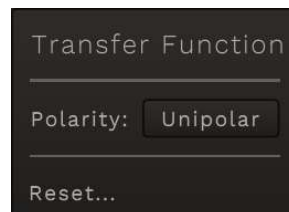
The transfer function panel displays the current shape of the transfer function that's being applied to the signal. The transfer function cannot be edited via this panel – its shape can only be adjusted with the Shape parameter.

The horizontal axis of the transfer function relates to the input signal and the vertical axis shows the corresponding output gain that will be applied to the input signal. A straight line from the bottom-left corner to the top-right corner of the display indicates that the transfer function is having no effect on the signal.

The shaded portion of the function shows the approximate current input level.



Right clicking the transfer function will open the following menu:



- **Polarity** – Toggles the current polarity of the transfer function. Unipolar will show values from 0 to 1 while bipolar will show values from -1 to 1.
- **Reset** – Resets the above settings to their defaults.

Effect Styles Panel

The style editor panel contains widgets used to control the current effect style. This panel is likely where you'll spend most of your time when using Contortion-24 as it contains the widgets that have the biggest effect on the sound.

Each of the effect styles has its own unique signal flow, the exact details of which we keep a secret as they've each been painstakingly hand-tailored to give the best character. The Shape and Colour parameters each control different aspects of the current style but in general the Shape parameter controls the shape of the transfer function while the Colour parameter changes the settings of any filters or other processors used for the current style.

Some styles are best suited to certain applications (such as the Punchy style that's best for drums/percussion) which others are good all-rounders. Experimenting with each of the styles and trying them on different sounds will help you learn what each style does and where you might want to apply it in future projects.

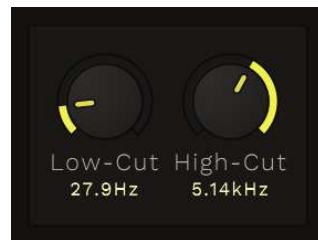


- **Style Combo Box** – Changes the currently selected effect style.
- **Shape Slider** – Controls the Shape parameter of the selected style. This usually just effects the transfer function.
- **Colour Slider** – Controls the Colour parameter of the selected style. This controls many different processors in the current style such as filters and compressors.

Post Filters Panel

The post filters are applied only to the wet mix of the signal after it's been processed. This allows you to filter out any unwanted high-end or low-end changes in the signal.

Frequencies outside the Low-Cut and High-Cut cutoffs will resort to the frequencies in the input signal. For example, if the plug-in is currently boosting frequencies above 5kHz by +6dB, setting the High-Cut filter to have a cutoff of around 5kHz will effectively undo that boost and the resultant output sound will have the same frequency content in the 5kHz+ range as the input signal.



- **Low-Cut Slider** – Controls the cutoff frequency of the low-cut (AKA high-pass) filter applied to the wet output mix.
- **High-Cut Slider** – Controls the cutoff frequency of the high-cut (AKA low-pass) filter applied to the wet output mix.

Output Panel

The output panel contains widgets used to control the final output of the plug-in, after the chosen effect style has been applied.

Same as the input panel, the layout of the output panel matches the signal flow of the plug-in. Firstly, the makeup gain is applied, then the dry/wet mix followed by the Left-Right or Mid-Side panning. At this stage, the signal is decoded back to its original channel configuration (mainly mid-side back to stereo) after which the final output signal can be optionally clamped to values between -1 and +1.



- **Makeup Gain Slider** – Controls the amount of makeup gain applied to the output signal.
- **Dry/Wet Slider** – Controls the ratio of dry to wet signal in the output.
- **Pan Slider** – Controls the Left-Right or Mid-Side panning.
- **Clamp Output Button** – Toggles on/off the clamping of the output signal from -1 to +1.

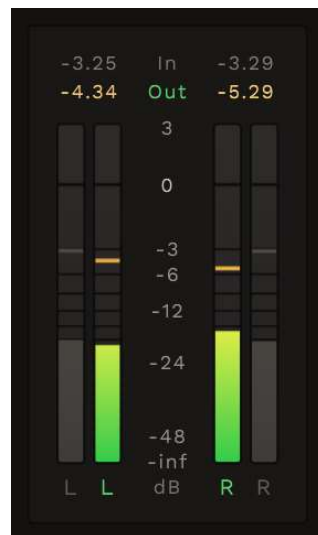
Level Meters

Contortion-24 displays input and output meters for both the left and right channels along with the current peak level of each of those channels.

The grey, outer meters display the input levels for the left and right channels (labelled L and R respectively below the meters). The current value of the corresponding meter's peak is displayed above the meter, also in grey. Similarly, the output meters are coloured and are the two inner-most meters and their respective peak levels are displayed above them (below the input peak labels) and are also coloured.

The solid, filled portion of the meter indicates the current RMS level of the corresponding channel which can be used to gage the relative loudness of the signal. The solitary line, usually at a louder level than the RMS indicates the current peak level for that channel.

If the peak level of any of the meters exceeds 0dB, that meter will be highlighted with a red border until the peak drops below 0dB again. If the RMS level exceeds 0dB, the whole bar will be coloured red.



Right clicking the level meters will display the following settings menu:



- **Peak/RMS Attack** – The attack time of the peak or RMS envelope.
- **Peak/RMS Release** – The release time of the peak or RMS envelope.
- **Peak/RMS Hold** – The hold/sustain time of the peak or RMS envelope.

Footer

The footer at the bottom of the window contains an oversampling menu named 'HD' and displays the current version of the plug-in.

HQ

v1.0.0