2-Band Distortion

Version 1.0.0

Welcome

Thank you for downloading this fine plug-in. **2-Band Distortion** is a crossover frequency splitter followed by a distorting waveshaper in each band.

In order to get the most out of the **2-Band Distortion**, please spend a few moments reading this brief manual.
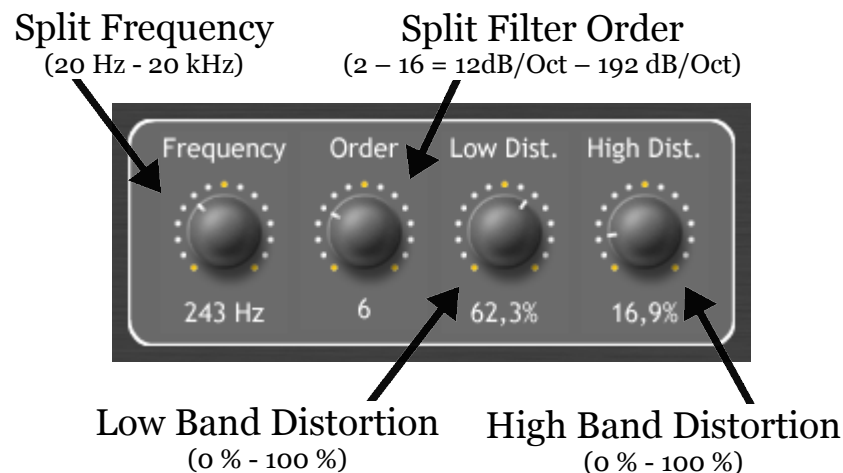
License

The pre-compiled **2-Band Distortion** has a very simple license:

1. **2-Band Distortion** is freeware. This means that you are free to use this plugin in any context. Also you are free to share it on a personal base (ie. give it to friends). However, only the entire unaltered archive, including this document, may be shared. Public redistribution is only allowed on request.

2. Copyright of the code and the pre-compiled plug-in remain property of the *Delphi ASIO & VST Project* and namely *Christian-W. Budde*.

3. This plug-in is provided at no cost; therefore the author *Christian-W. Budde* assume no responsibility for any negative effects that may occur to the end user or the equipment used to run the plug-in.

4. Magazine editors are welcome to include the plug-in on cover mount discs or similar media; However, it is mandatory to inform the author *Christian-W. Budde* about this. A copy of the publication is always appreciated, but not expected.

User Interface

The user interface shows all adjustable parameters including a readout for every value. There are no meters available to maintain the lowest possible CPU usage without wasting too much CPU cycles. Either a dedicated analyse plugin or the build in meters can be used for this task.

Here is a commented screenshot:

Split Frequency
(20 Hz - 20 kHz)

Split Filter Order
(2 – 16 = 12dB/Oct – 192 dB/Oct)

Low Band Distortion
(0 % - 100 %)

High Band Distortion
(0 % - 100 %)

On the left of the plugin the crossover frequency splitter controls can be found. A Linkwitz-Riley filter is used to separate the audio signal into a low and a high frequency band. The splitting frequency and the filter order can be adjusted.

On the right the amount of distortion can be adjusted for each band separately.

The dials can be adjusted by clicking and dragging up and down on a dial. To reset the dials to their defaults hold the [Ctrl] key while clicking on the dial. Holding the [Shift] key enters the fine tune mode.

Below any dial a read out shows the exact value of a parameter.

The parameters

This plugin features 4 adjustable parameters in two categories. The categories are **'Crossover'** containing the crossover filter parameters and **'Distortion'** containing the distortion amount parameters.

Crossover

To separate the two bands, a linkwitz-riley filter is used (per channel). These filters have the properties to maintain a flat frequency response when mixed together.

NOTE: Since Linkwitz-Riley filters are minimum phase filters they do have a group delay and might introduce phasing issues if the order is set too high.

Frequency

The 'frequency' parameter controls the split frequency. The range is 20 Hz – 20 kHz.

Order

The filter order can be adjusted from second order to sixteenth order (in steps of two). This equals to a roll-off of 12 dB/Oct to 192 dB/Oct.

Distortion

For both bands (low and high) the distortion amount can be controlled individually. While 0% means no distortion it increases gradually to a THD of about -20 dB (=100 %). To achieve this distortion, a modified tanh() function is used.

Feedback / Bug Reports

I am always eager to hear feedback or have bugs reported. The easiest way is to send me a mail to: Christian@aixcoustic.com

Furthermore feel free to download the source code, that can be found in the Delphi ASIO & VST Project at sourceforge.net.

Version History

    1.0.0   First release!

Credits

- Programming: Christian W. Budde
- Additional Framework Programming: Tobias Fleischer, Maik Menz
- Special Thanks: Swen Müller, Duncan Parsons, Laurent de Soras
- Documentation based on a template by Greg Pettit

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