

# Renaissance DeEsser

## Software audio processor User's Guide



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## Chapter 1 – Introduction

Thank you for choosing Waves Renaissance DeEsser. Waves created Renaissance DeEsser to provide the finest audio quality and ease of use to maximize productivity.

### What is a DeEsser?

A DeEsser is an audio processor designed to attenuate high frequency Esss sounds. Some phonetics create high energy peaks in certain frequencies. For example S or Th sounds are created in the front of the mouth by the tongue and teeth which are also closer to the receptive component i.e. microphone membrane. This can result in unwanted distortion or extreme presence in the higher frequencies. The DeEsser is very effective in attenuating these to a more natural sound eliminating the distortion and high frequency peaks.

### How does it work?

The DeEsser is a compressor that uses a side-chain filter for detecting the energy in the high frequencies rather than the energy of the whole wide-band.

This way compression can be applied specifically when the energy in the side-chain exceeds a certain threshold.

### What's unique about the Renaissance DeEsser?

The Renaissance DeEsser relies on technologies used in Waves C4, Renaissance VOX and Waves DeEsser and it has several new proprietary features that make it better than other DeEssers including Waves DeEsser. We can't tell you all the secrets but here are a few main advantages:

- Phase compensated Crossover – This is very important in order to avoid undesirable coloration to the sound and to eliminate phase modulation that would otherwise occur as an artifact of the amplitude modulation applied by the compressor. This same type of crossover is used in the well-accepted Waves C1, and C4.
- Adaptive threshold – The threshold in Renaissance DeEsser is not the normal “absolute value” threshold that you usually have. Dynamically adapting to the input signal in order to provide a more unified DeEssing effect yielding more natural sounding results.
- Attenuation range control - The Renaissance DeEsser lets the user specify the maximal desired gain reduction for better control of the DeEssing effect.
- Enhanced visual feedback – As the DeEsser works only on part of the spectral range of the input, the graphic user interface of Renaissance DeEsser incorporates a graph that lets you see what you hear.

The TDM version is a Double precision 48bit process, dithered back to the 24<sup>th</sup> bit.

### So its just for DeEssing?

The DeEsser does just DeEssing just like a compressor only applies compression and an Equalizer only does EQ. In fact Renaissance-DeEsser can be used to control the level of any high frequency sounds, not only human voice ‘Esses’. A DeEsser can be very useful for tracking, mastering, live performances and on-air situations.

Here are some classic uses for the Renaissance DeEsser:

- First, the DeEsser should be placed before the EQ and general vocal compressor.
- Use the DeEsser in mastering rock music to calm down a Hi Hat that ended up too high. The DeEsser is ideal for this without making the whole mix lose its hat.
- You have a great vocal take that you want to shine up with some HF enhancement but the essses really get out of hand without a DeEsser.
- Sammy the sportscaster is spitting away at your condenser.

## Chapter 2 – Quick Start and basic adjustments.

### Quick Start

Select the factory preset that describes the desired DeEssing and live happily ever after.

### D.I.Y.

1. First, find the problematic frequency. To do this set your monitoring to Side Chain. This way you will listen to the sidechain.



2. Now set the frequency control so that you clearly hear the sibilance that you want to attenuate (Typically between 4-7K) but as little as possible of anything else.
3. Set your monitoring to Audio, you should already be DeEssing as the threshold is adaptive. A 0 threshold would already provide some moderate attenuation within the indicated attenuation range.
4. Now take the threshold down to the point where you are satisfied with the sensitivity of the attenuation and the way it sounds.
5. Adjust the Range control so that you get just enough reduction.

### Basic Adjustment

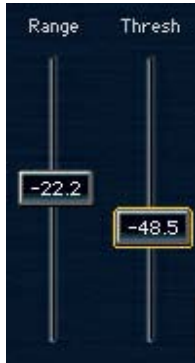
The controls of the Renaissance DeEsser are designed for making frequency choices and dynamic behavior specifications.

#### FREQUENCY CHOICES:



The 'ess' sound in "Sweet" carries most of its energy around the 6kHz mark (male voice). In "Sugar" most energy lies around the 4kHz mark (also male voice). For general type DeEssing it would be wise to select a frequency slightly below 4k and use a high pass type of side chain. This will take care of both Sweet and Sugar. For very specific DeEssing you should select the exact frequency and use a band pass type side chain. If you select 6kHz frequency and a band pass side chain you can be very effective on "Sweet" and less on "Sugar".

#### DYNAMIC BEHAVIOR:



The Threshold and Range controls let you specify how intensely and to what extent you want to attenuate. A recommended practice would be to fix the Threshold to  $-22\text{dB}$  and then use the Range control to specify the amount of DeEssing you want to apply. If you then feel the DeEssing is too sensitive go back and fine-tune your threshold.

A DeEsser is often used as a part of a Vocal processing chain that has other EQ components. The EQ and DeEsser vocal chain may actually raise the overall high frequency content. For this reason the Renaissance DeEsser is designed with a potential to reach extreme DeEssing results. It supports attenuating 48dB with an adaptive threshold going down to  $-80$ .

#### Important Note:

It is very easy to over DeEss. If your narrator sounds like someone took out his front teeth you are probably overdoing it. If you hear the “DeEssing effect” that too is usually a sign of over DeEssing. If the audio passage sounds rather natural and free from annoying Sizzle and distorted Esses then you got it right.

## Chapter 3 – Renaissance DeEsser Controls and Displays.

**THRESHOLD – ADAPTIVE THRESHOLD 0 TO –80dB, DEFAULT VALUE: -6dB.**



The threshold sets the reference point in the energy of the side-chain. The threshold is adaptive in the Renaissance DeEsser providing more natural sounding results. As result this control is different than the classic threshold common in compressors. The threshold actually defines the general sensitivity of the attenuation. Low thresholds have high sensitivity and will make the DeEsser get to its Maximal attenuation very quickly. Higher threshold values have lower sensitivity and will make the attenuation more dynamic. The Maximal attenuation will reach its limit only when there are very strong peaks in the energy of the side-chain.

**RANGE – ATTENUATION RANGE 0 TO –48dB, DEFAULT VALUE: -14dB.**



The Attenuation range defines the maximum amount of gain reduction possible. When the energy in the side-chain is substantially higher then the threshold, the Maximal attenuation set by the Attenuation range will be applied by the DeEsser.

**FREQUENCY – SIDE CHAIN FREQUENCY 2 – 18KHZ, DEFAULT VALUE: 5KHZ.**



The Side Chain in the Renaissance DeEsser can either be a high pass or band pass filter. The frequency indicated in this control sets the roll off start point for a high pass filter or the center frequency of the band pass filter.

**TYPE – SIDE CHAIN TYPE, TOGGLE BETWEEN HIGH-PASS OR BAND-PASS, DEFAULT VALUE: HIGH PASS.**



The Side Chain type selector specifies whether a High Pass or Band Pass side chain filter will be used in the detection and split mode compression.

**MODE – COMPRESSION MODE, TOGGLE BETWEEN WIDEBAND OR SPLIT, DEFAULT VALUE: SPLIT.**



In Split mode the audio passes through a crossover which splits it into two frequency bands. High and low bands in High-Pass mode, or Band-Pass and Band-Reject Band-Pass mode. In split mode the gain attenuation will be applied to the active frequency band of the side-chain. In Wideband mode the gain attenuation will be applied to the whole audio rather than to a specific frequency band.

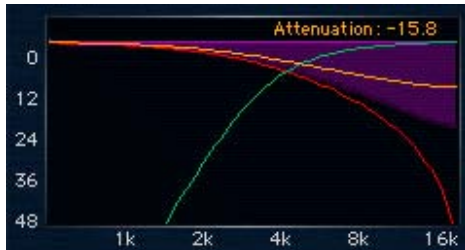
Note! The input energy detection will always be Side Chain related. The compression mode relates only to the way the DeEsser will apply its gain attenuation.

**MONITOR – MONITOR MODE, TOGGLE BETWEEN AUDIO OR SIDE CHAIN, DEFAULT VALUE: AUDIO.**



The monitor mode selector is located directly under the output meters. It toggles the Renaissance DeEsser's output. Audio – in this mode you hear the complete audio output of the DeEsser. The Audio mode is the default mode, which is the correct when using the plug-in for normal DeEssing or any frequency dependant compression job. Side Chain mode lets you hear the DeEssers side chain in order to more selectively “catch” the offending frequency.

#### THE RENAISSANCE DEESSER GRAPH



The Graph gives instant visual representation to the settings of Renaissance DeEsser and also real time representation of the actual process.

The graph shows Frequencies on the X axis and Gain on the Y axis.

The graph shows the following process related components:

The Cyan line represents the side chain or the active range of the Crossover filter.

The Red line represents the passive range of the Crossover.

The Yellow line represents the frequency dependant attenuation.

The Transparent purple shade represents the gain attenuation range.

The graph shows an attenuation peak hold numeric display, above the 0dB gain line. Click mouse anywhere in the graph above the 0dB to refresh the attenuation Peak hold.

## OUTPUT METERS



The Renaissance DeEsser shows output peak metering with a red LED-like clip indicator. Since the DeEsser can only attenuate the chances of clipping are very low. If clipping occurs it probably originates in the source. In rare cases when the input is already pushing close to full scale, the active Crossover may Cause a sample to overflow. Under the meters you can see numeric “peak hold” indicators. These indicators show the peak output. To reset them click anywhere in the output meters area.



## Chapter 4: Factory presets.

The factory Presets in the Renaissance DeEsser give an example to the scope of usage and different modes that the Renaissance DeEsser offers to its user.

The examples are showcased by 3 male DeEssing presets and 3 Female DeEssing presets.

Each preset comes in 3 flavors:

Wide – using WideBand compression mode. Recommended when the DeEsser is used stand-alone on a voice only source.

Split – Using split mode to compress only the Hi Pass. This setting is good for general purpose and is better than WideBand when the DeEsser is used as part of a process chain.

Narrow – Using Band Pass detection and compression. This setting is the most frequency specific. It is mostly recommended when the offending sound that you want to compress is very stable in pitch.

### **Important note:**

0 Threshold is not idle due to the adaptive threshold control. If you desire an idle setup, set the range control to 0. This insures that no attenuation is applied.

### **RENAISSANCE DEESSER FULL RESET:**

The default preset of Renaissance DeEsser is a great general purpose DeEssing setting though it is rather gentle. For more intensive DeEssing lower the threshold and range to achieve the desired intensity.