Smoothing

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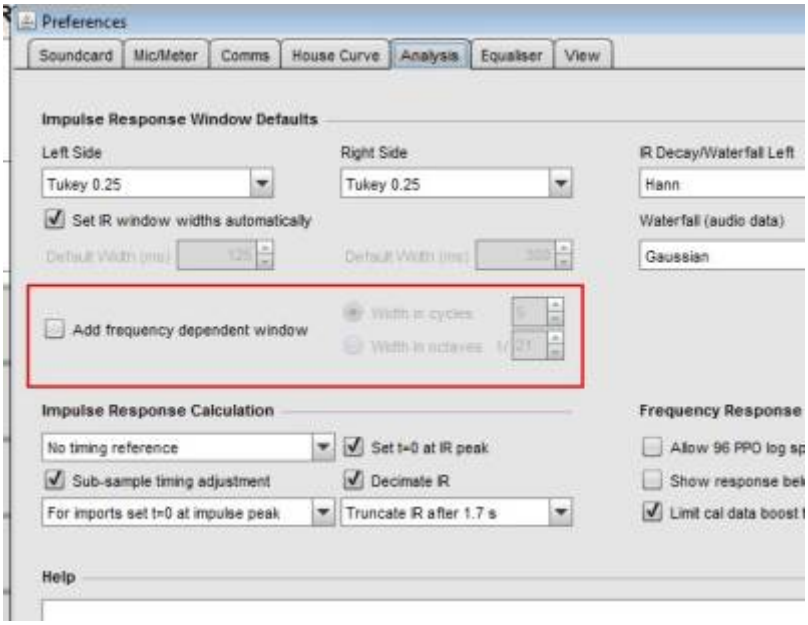
Using REW filters generation and calculate the amplitude correction. As the averaged measurement contains all the information from the individual measurements, you can decide to smooth the curve, using FDW or smoothing tools from REW, in order to generate the filters. The smoother the curve you use to calculate the correction, the less filters will be generated by REW.

Additional smoothing is not needed if FDW (frequency dependent windowing) has been enabled. But if you do, use VAR smoothing as this will wisely smooth differently across the frequency spectrum and will require less EQ in higher frequencies.

Depending on the measurement I use 1/12th or 1/24th octave smoothing and 15 cycles FDW to generate the correction filters and avoid 'micro-managing' the amplitude and phase corrections.

But before averaging, you need to check whether you have selected a default FDW in your preferences of REW. If so, you need to be aware that the algebraic functions will be conducted with this FDW applied at each step. This is not a problem, but you should be aware of this. We will use No FDW.



Multiple Averaged Measurements

Measuring

In REW it is possible to average a number of measurements. The idea behind this is to eliminate over-corrections which validity is limited to the exact place where the microphone has been setup in case of a single measurement. Use an imaginary cube of 25 cm around your hear position and perform +/- 5 measurements all at ear height with the mic always pointing to the front wall (or to the ceiling if your mic is designed that way and it has 90 degrees calibration file). Resulting in a total of 10

measurements for two speakers - to the left, right, front and rear of the LP each around 25 cm away from LP. If you consider bass upper frequency limit to be 200 Hz which converts to a wavelength of 43 cm, a 50 cm wide (25 x 2) measurement area seems to cover enough of the bass waves.

For the center head position, take two measurements for Left and Right speakers as this is the most important location. Using two measurements at the LP will give a slight bias to the central position during averaging. Keep both measurements if they are identical (they should be identical at least past the speaker's lowest bass frequency capacity). If they are not identical it is probably caused by some unwanted environmental noise during measurement, you should delete the irrelevant looking one.

Time Alignment

Before averaging make sure that all measurements are time aligned prior to making any kind of algebra on these measurements. Select the corresponding measurements inside the 'All SPL' tag of REW and use the 'Time Align' function in the Control window. Do not align IR starts!