Room EQ Wizzard

REW will be used to do the following:

1. Measure the room frequency response;
2. Generate create the initial parametric EQ filter settings to achieve a flat frequency response.

For each individual stereo channel do the following steps:

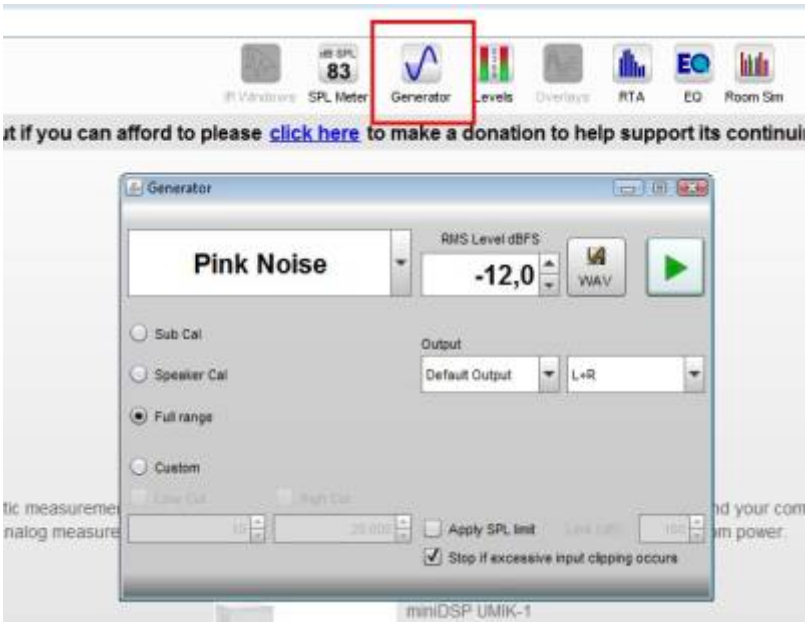
UMIK-1 setup

With the miniDSP UMIK-1, you have an easy way to get a precise acoustic measurement. First download the calibration file for your microphone. Each microphone has a unique calibration file, which define the specific frequency characteristics of each individual microphone. The calibration file ensures that your microphone is as accurate as possible. Go to the UMIK-1 page and enter your microphone's serial number. It is in the form xxx-yyyy and labeled on the microphone. There are 2 versions of of the calibration files available. One version for the microphone directly aimed at the speakers (stereo setup) and one 90 degree version for the microphone aimed at the ceiling (for surround sound setup). Use “Save As” in your browser to save the numbers as a file e.g. 7000343.txt.

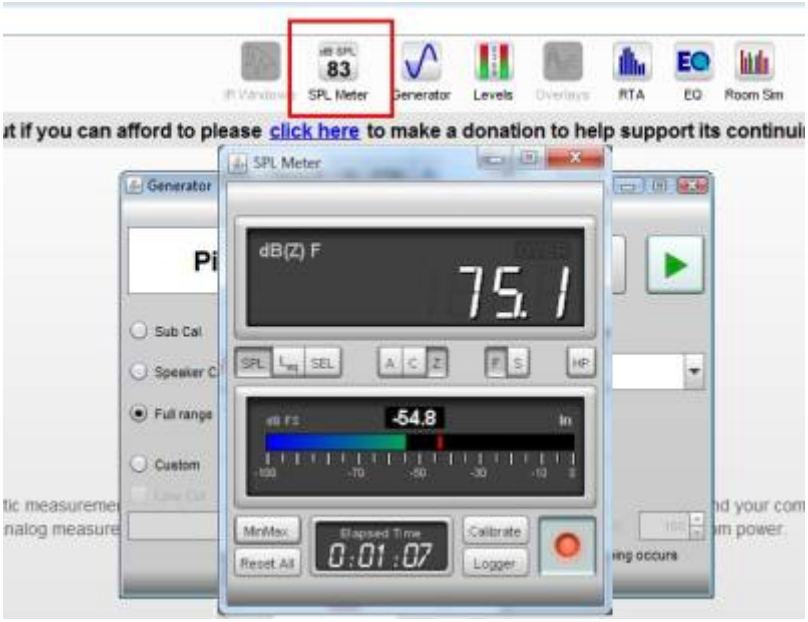
Connect the UMIK-1 to your computer using the supplied USB cable. Once installed, start REW. You will see a screen asking if you want to use the UMIK-1. Click on Yes. (If you don't get this screen, go to the REW Preferences window and set the Sample Rate to 48 kHz.)

Set levels

The UMIK is automatically calibrated by REW for sound level (this information is in the calibration file). But you need to set your system to generate a suitable signal level. Click on the Signal Generator button and set the parameters like illustrated below. Position your microphone at the listening position and turn the volume of your system down. Then click on the Play button (green triangle), and turn the volume up until the test signal is at a comfortable level.

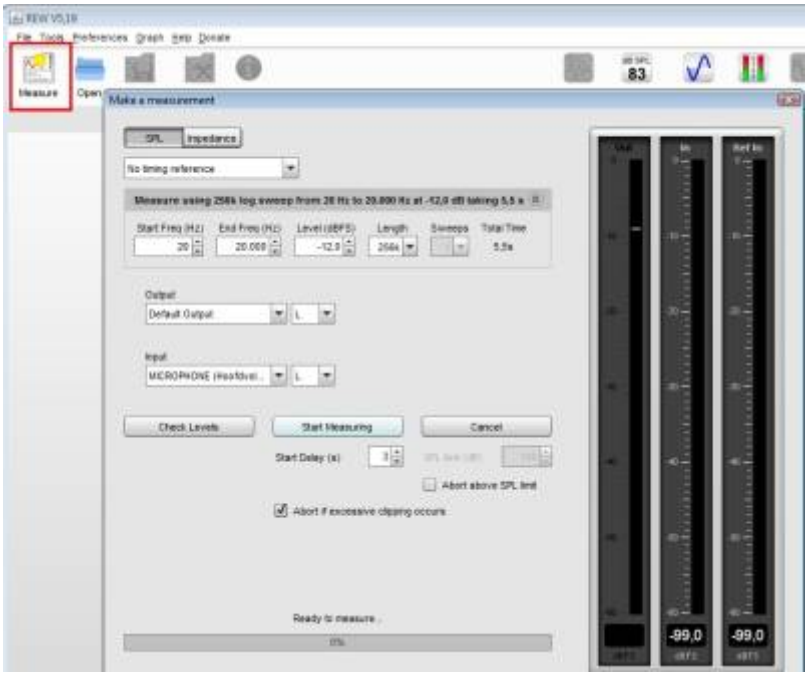


Now open the REW SPL Meter. Click on the red button in the lower right corner to turn it on, and adjust your system volume until the meter reads about 75 dB.

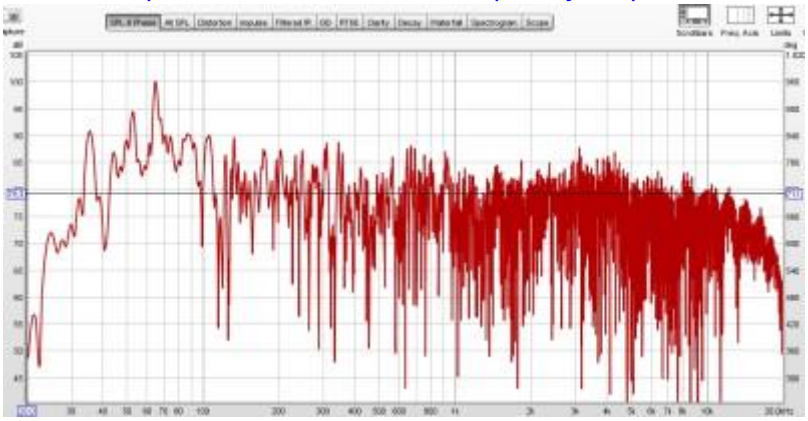


Run a measurement sweep

Click on the Measure button near the top left of the main REW Screen. Check that the level is set to -12 dB, the output and input channels are properly set and finally click on the Start Measuring button.

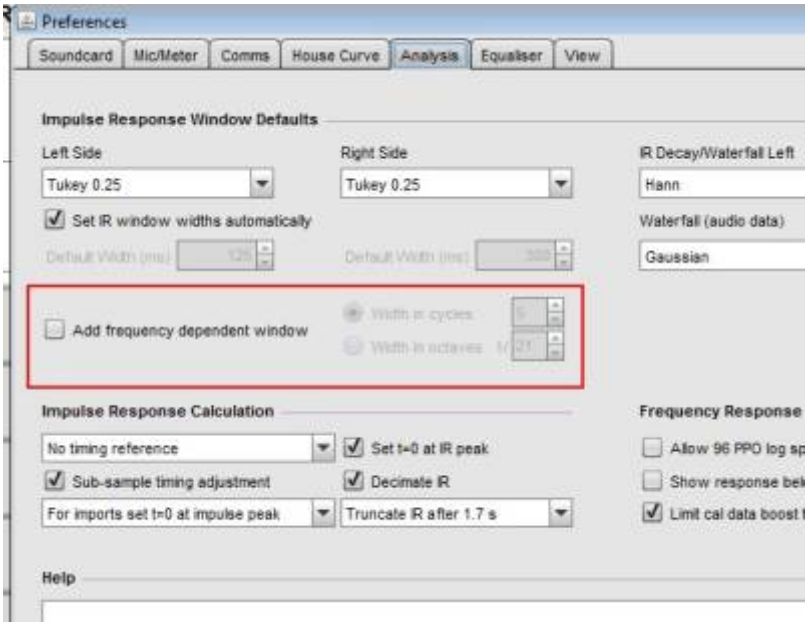


REW will make a “whoo-oop” sound through your speakers. A short time later, you should see your first in-room measurement and present the measured frequency response in the window.



Average Measurements

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. 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.

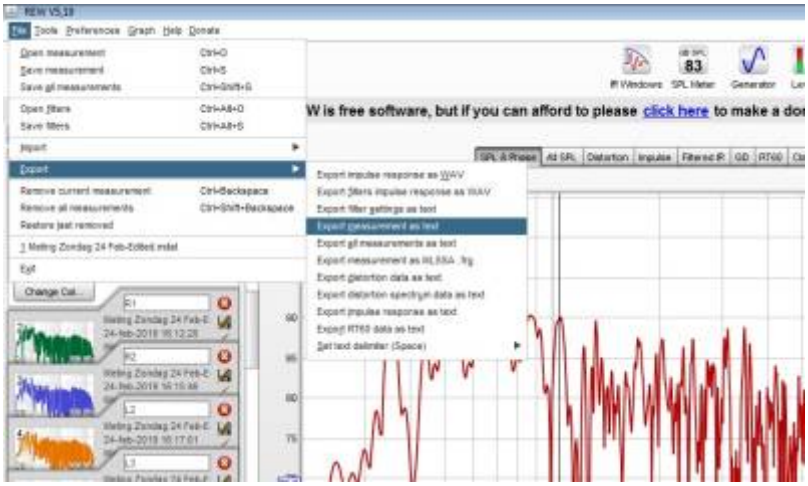


Averaging is done in two steps. Execute this averaging process once for each channel:

1. Time Aligning: 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.
2. Averaging: you need to do is select the measurements you want to average in the ‘All SPL’ tag of REW and use the ‘Vector Average’ function inside the Control window.

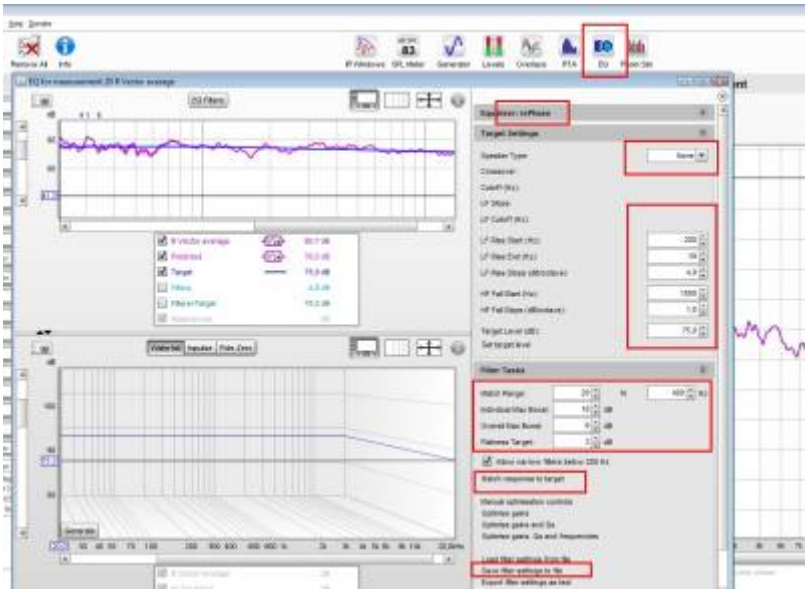
Save Measurements

Now save the measurement so that it can be used in Rephase as a baseline measurement. Select “File → Export Measurement → Export Measurement as text”.



Generate EQ filter

In the top menu press the EQ button. On the right side of EQ window under Equaliser choose rePhase. Under Target settings configure preferred settings for your room. Set target level to have REW set the target level or configure it manually.



Under Filter tasks hit “Match response to target”. Hit EQ filters button to get dialog for additional manual filter adjustment. Hit Save filter settings to file to save REW EQ filter (use XML format to imported into rePhase).

Save project

Save your work under File/Save All Measurement