

## Final testing info

In the final stages of testing I found that the quality of your parts greatly affects the outcome of your frequency response. When I used a high quality copper ribbon inductor my crossover completely changed from my initial tests in mcardle. I am not entirely pleased with these results as now I have huge dips and spikes in my frequency response curve that have adversely affected my fidelity (figure 1).

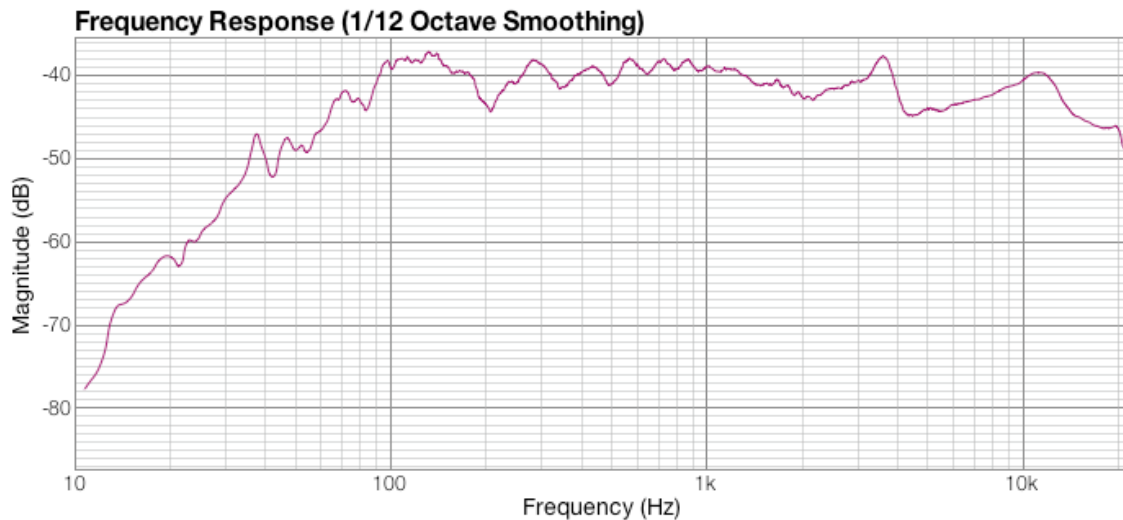


Figure 1. Final crossover with high grade parts and three baffle step compensators one at 380 Hz for the whole system one at 380 for the woofer alone and then one at 3,500 for the tweeter.

My tweeters also very there is a visual difference between the two of them and this has adversely affected my stereo image (figure 2)

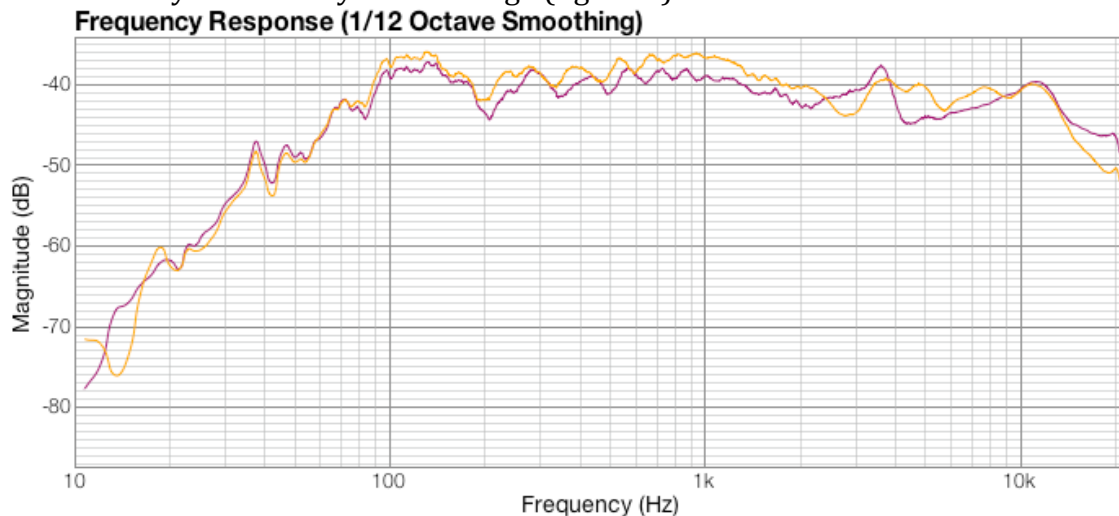
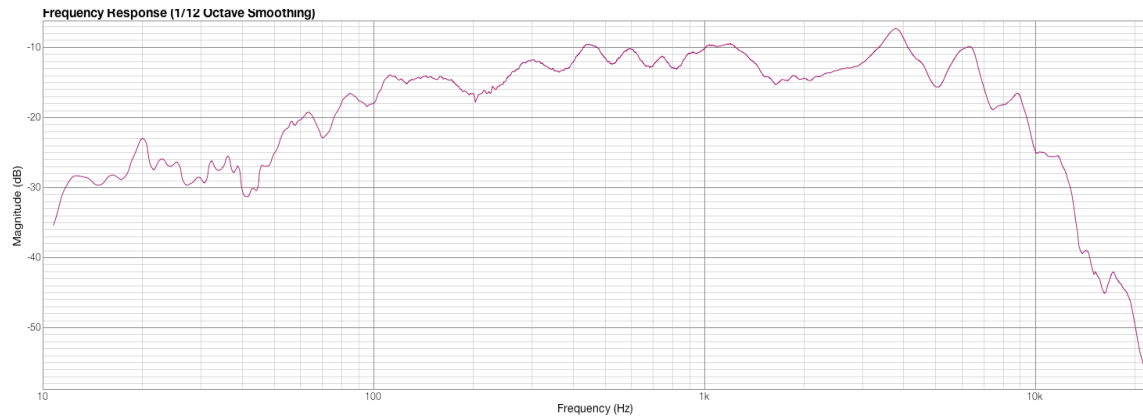
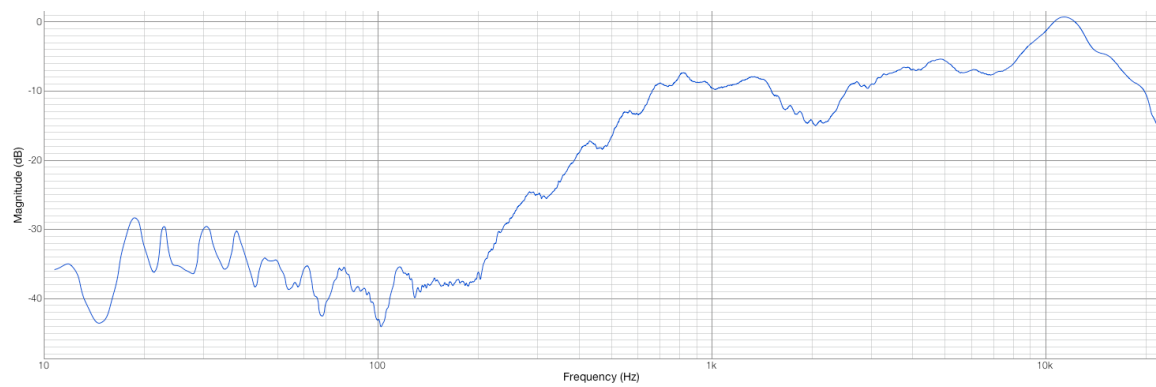


Figure 2. Left right comparison the crossovers were made the same however there is a visual difference in the tweeter itself I think this may be the cause for the difference

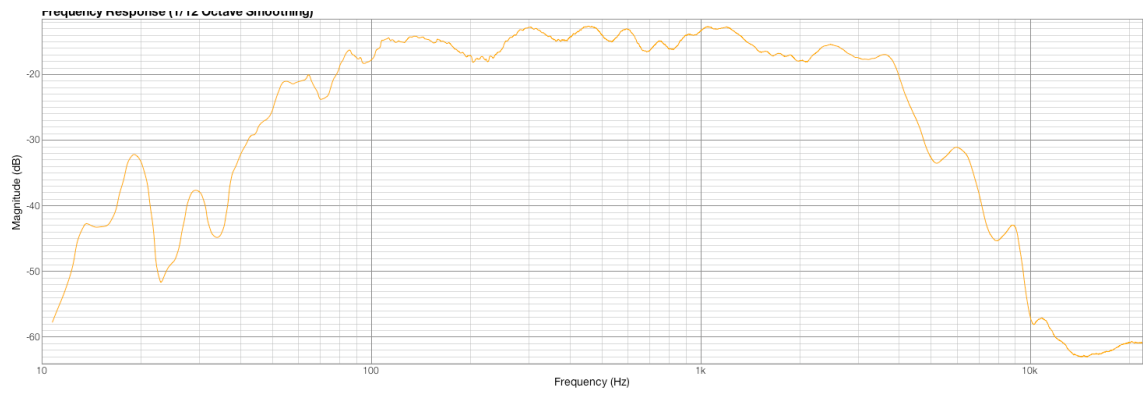
These are pleasing speakers to listen to they are not fatiguing in any way and are warm sounding with quite a bit of punch despite the rapid decay before 100 Hz.



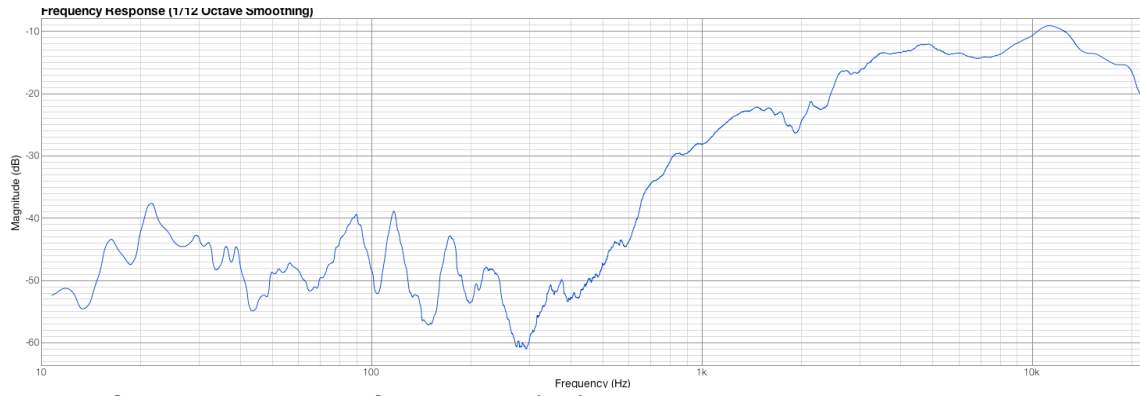
The bare woofer in the enclosure with out a crossover



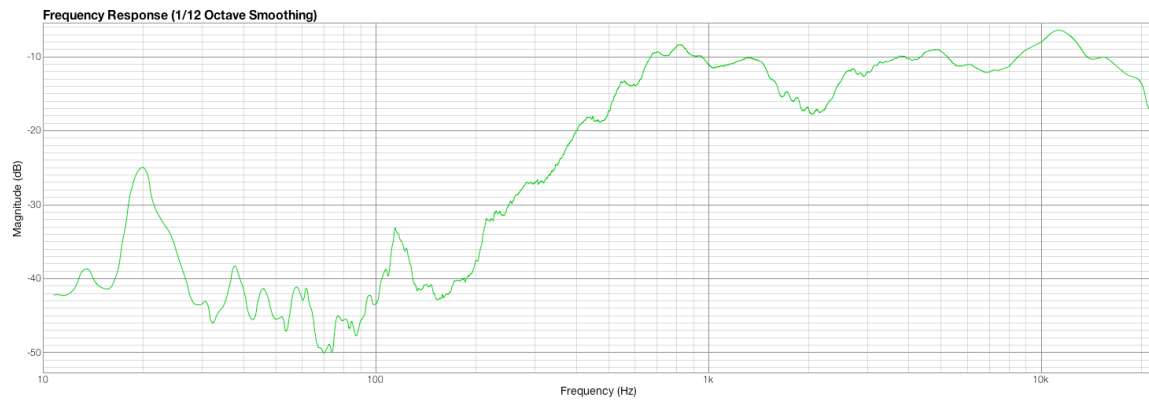
the bare tweeter in the enclosure with out a crossover



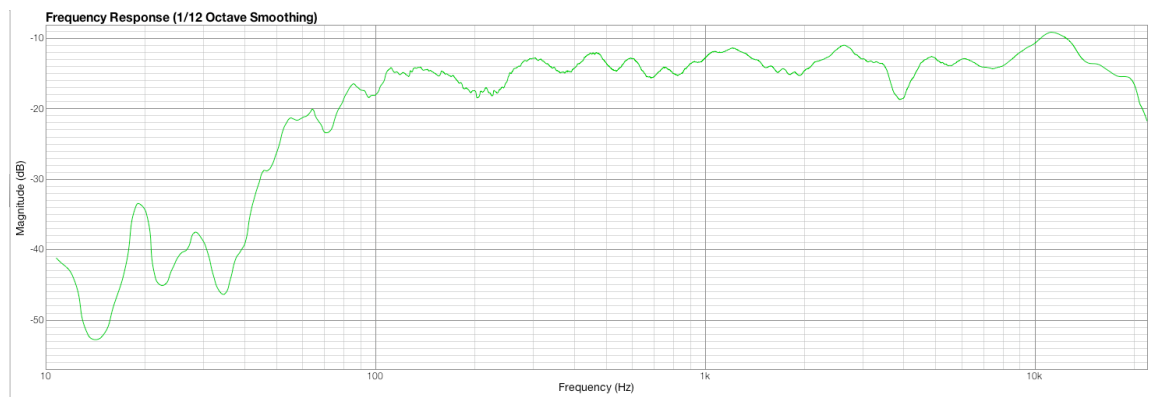
first order @ 2,000 Hz on the woofer (#1 cross over)



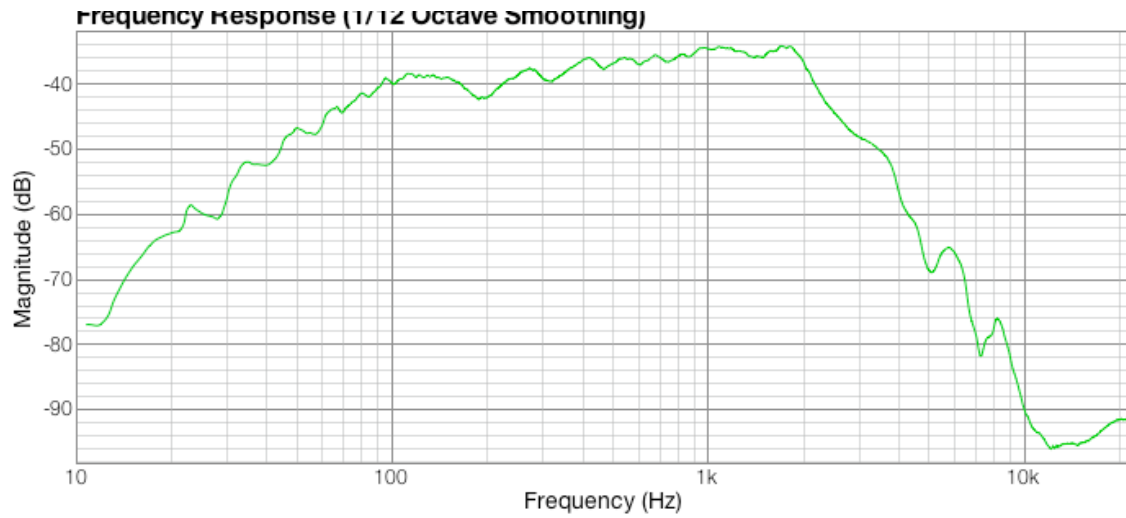
First order @ 2,000 Hz on the tweeter (#1)



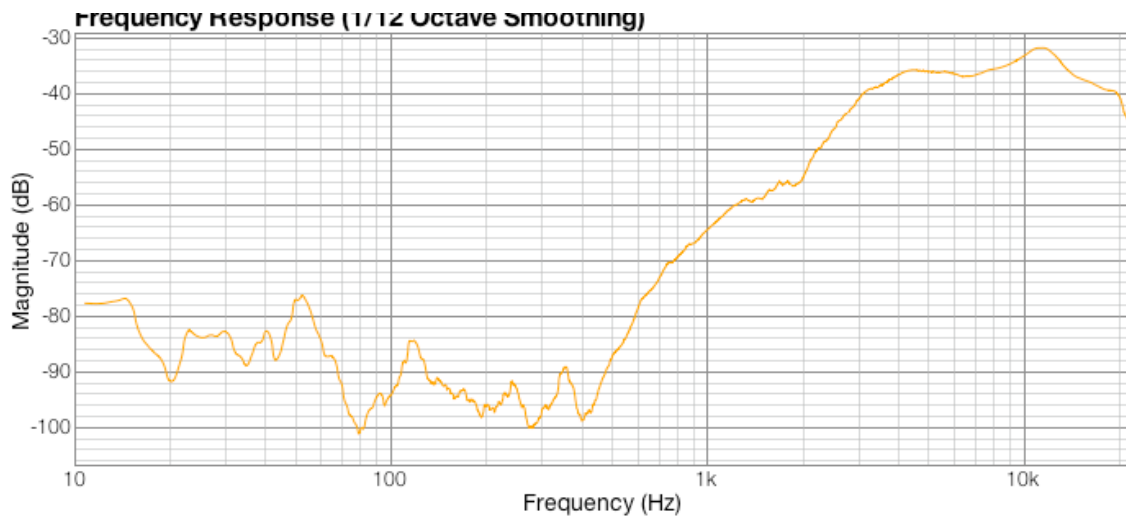
Padded first order tweeter (#1)



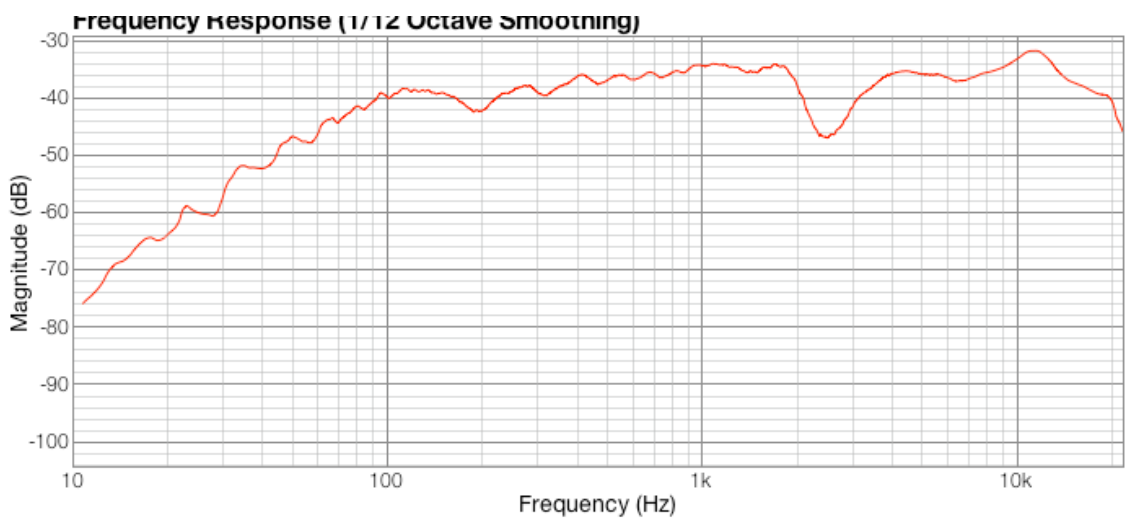
full #1 crossover design with out a baffle step compensator



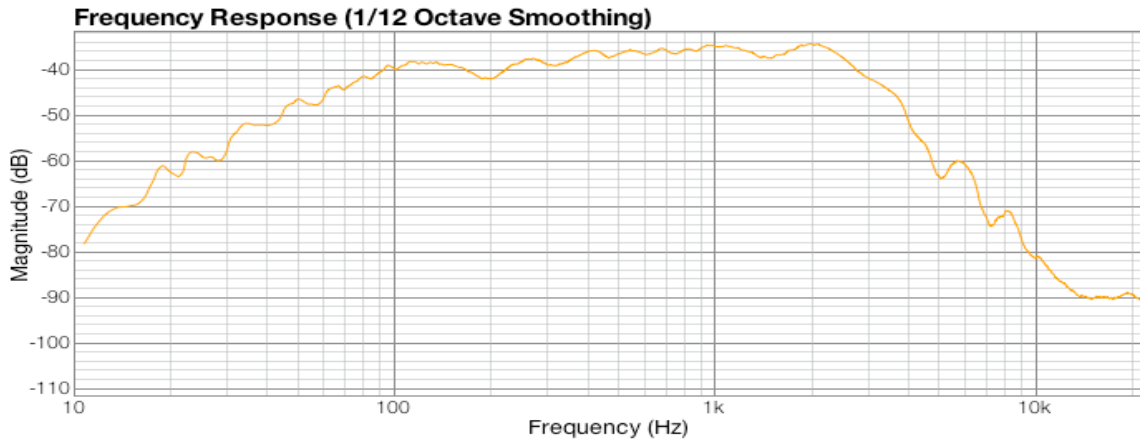
woofer with second order at 2,000 Hz (#2 crossover)



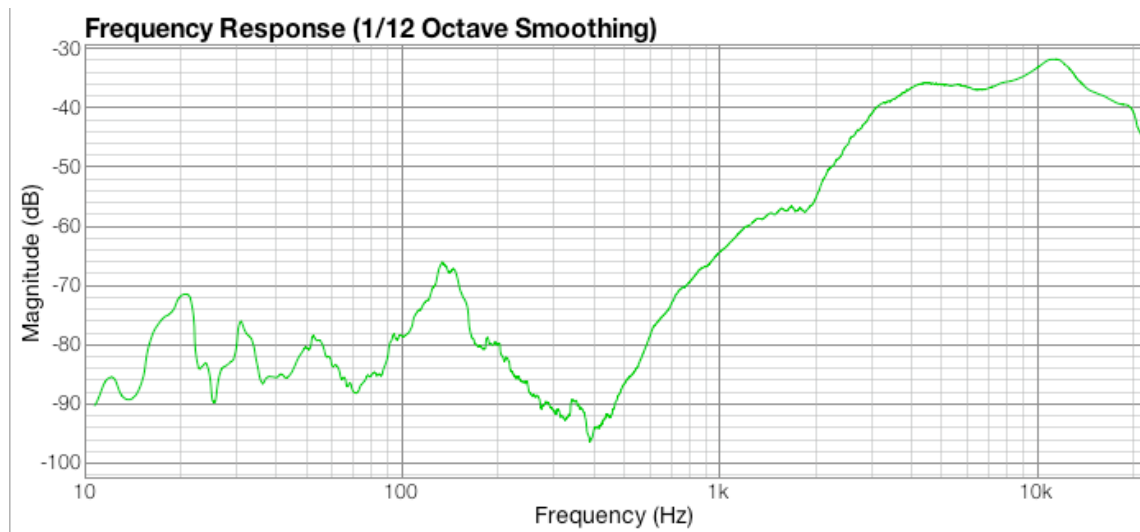
tweeter with second order @2,000 Hz



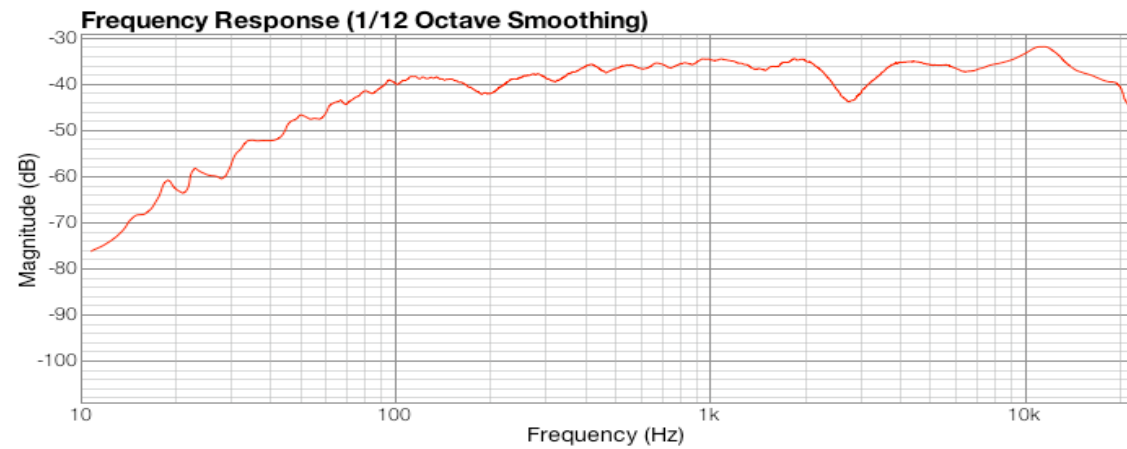
#2 full with inversed polarity



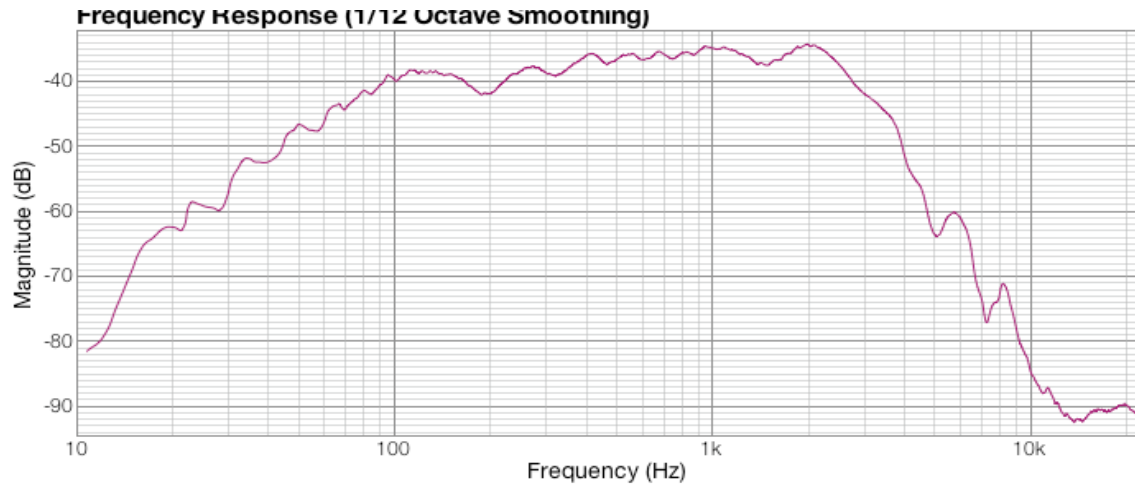
woofer with second order at 2,500 Hz (#3 crossover)



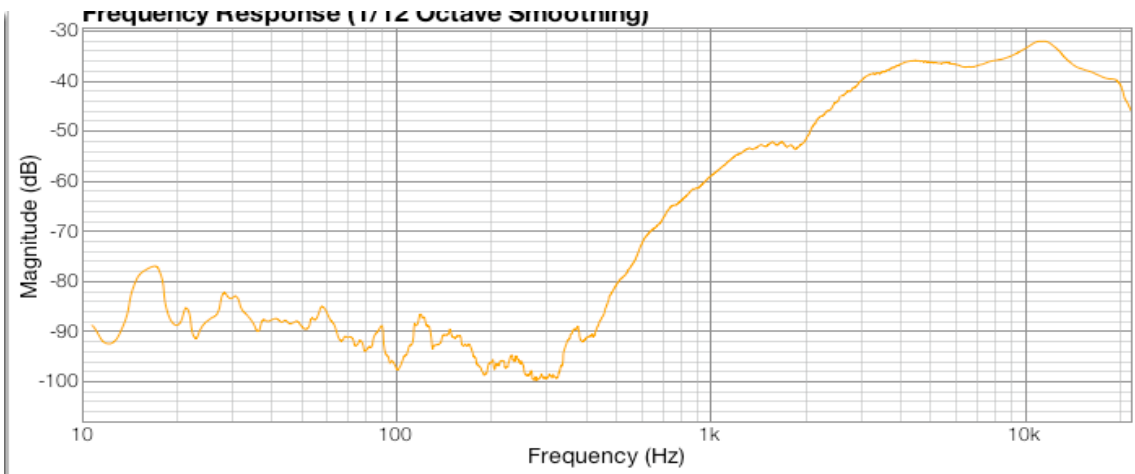
tweeter with crossover at 3,000 Hz (#3)



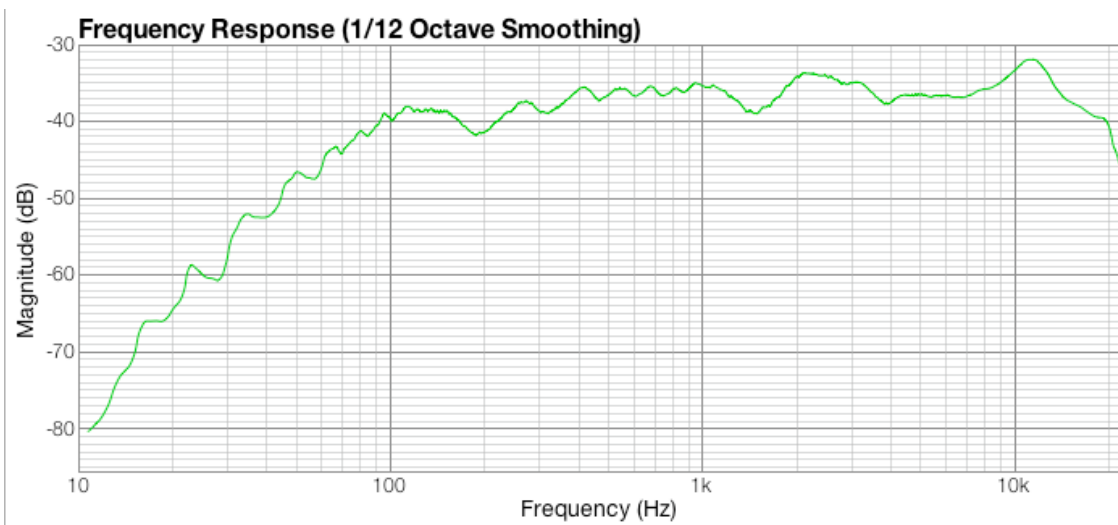
#3 full range crossover note the negative summation at nearly 3,000 Hz due to 90degree phase shift



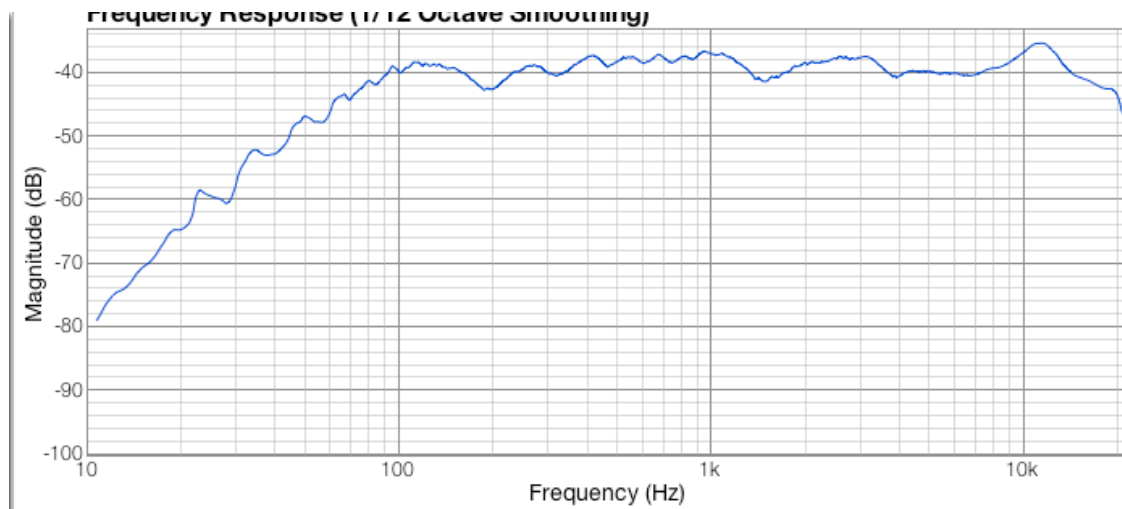
Woofer with a third order butter worth at 2,500 Hz (#4 crossover)



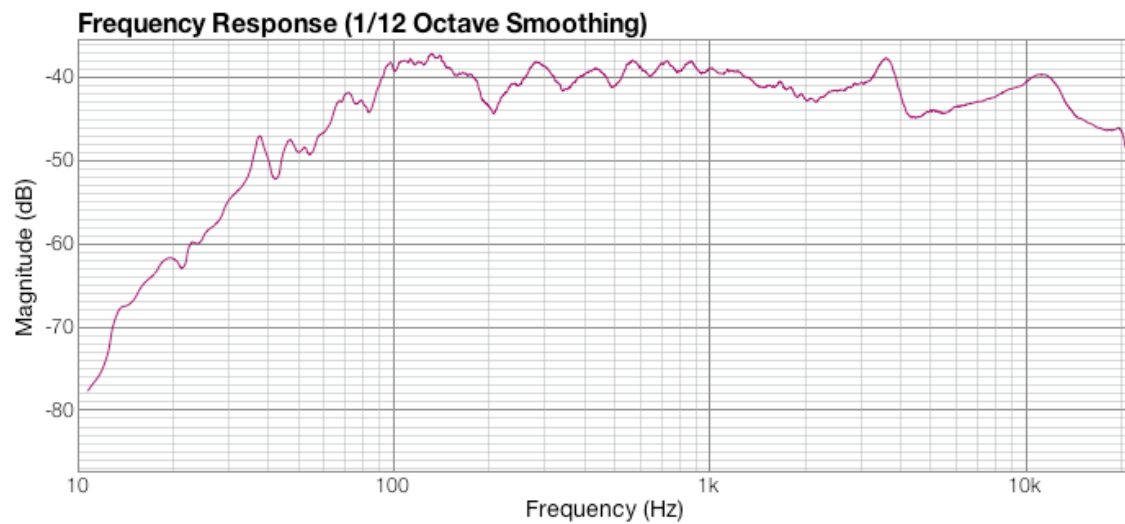
tweeter with a third order Bessel at 2,500 Hz (#4)



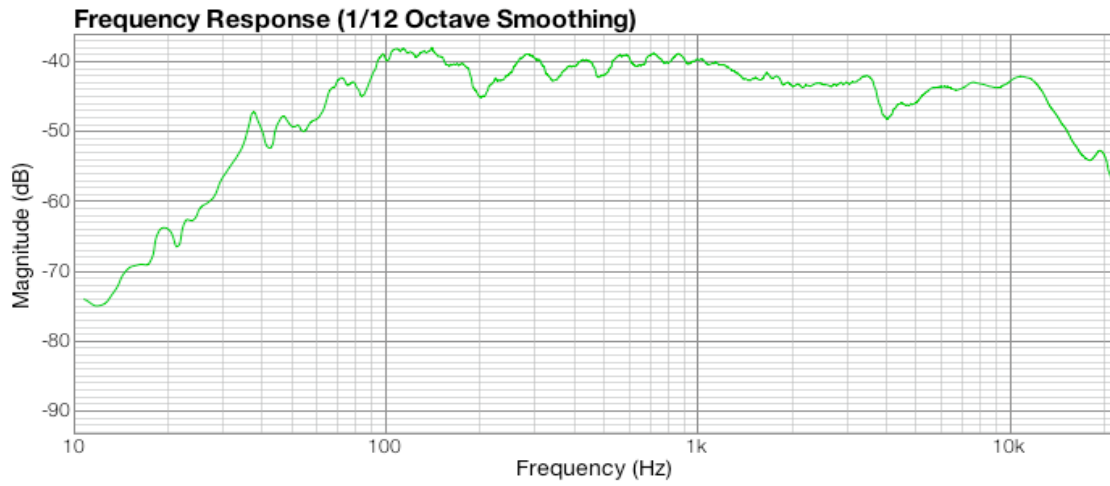
#4 full range



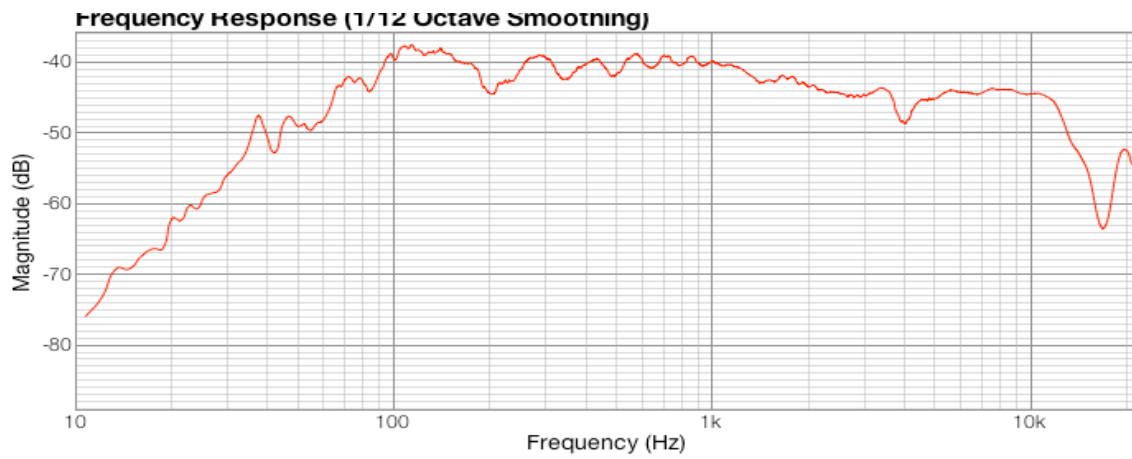
#4 with a baffle step compensator at 380 Hz with a 3 db pad



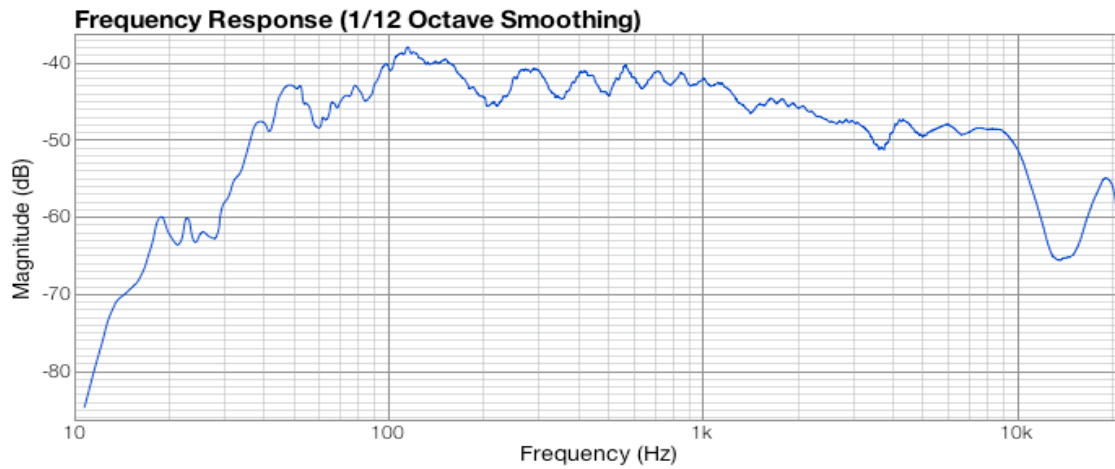
Final crossover with high grade parts and three baffle step compensators one at 380 Hz for the whole system one at 380 for the woofer alone and then one at 3,500 for the tweeter.



Final 15 degrees off axis

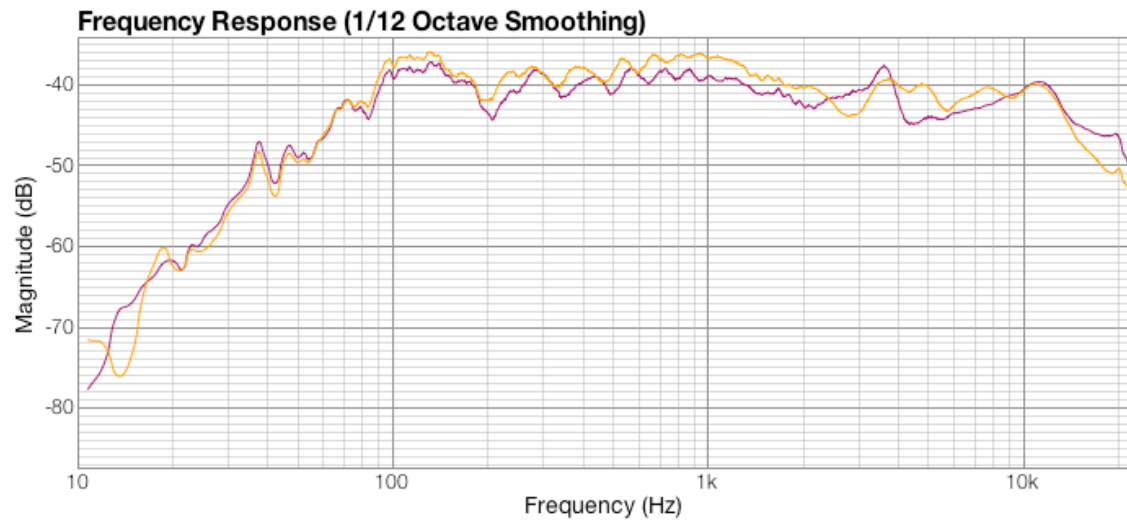


Final 30 degrees off axis



Final 45 degrees off axis





Left right comparison the crossovers were made the same however there is a visual difference in the tweeter itself I think this may be the cause. For the difference

