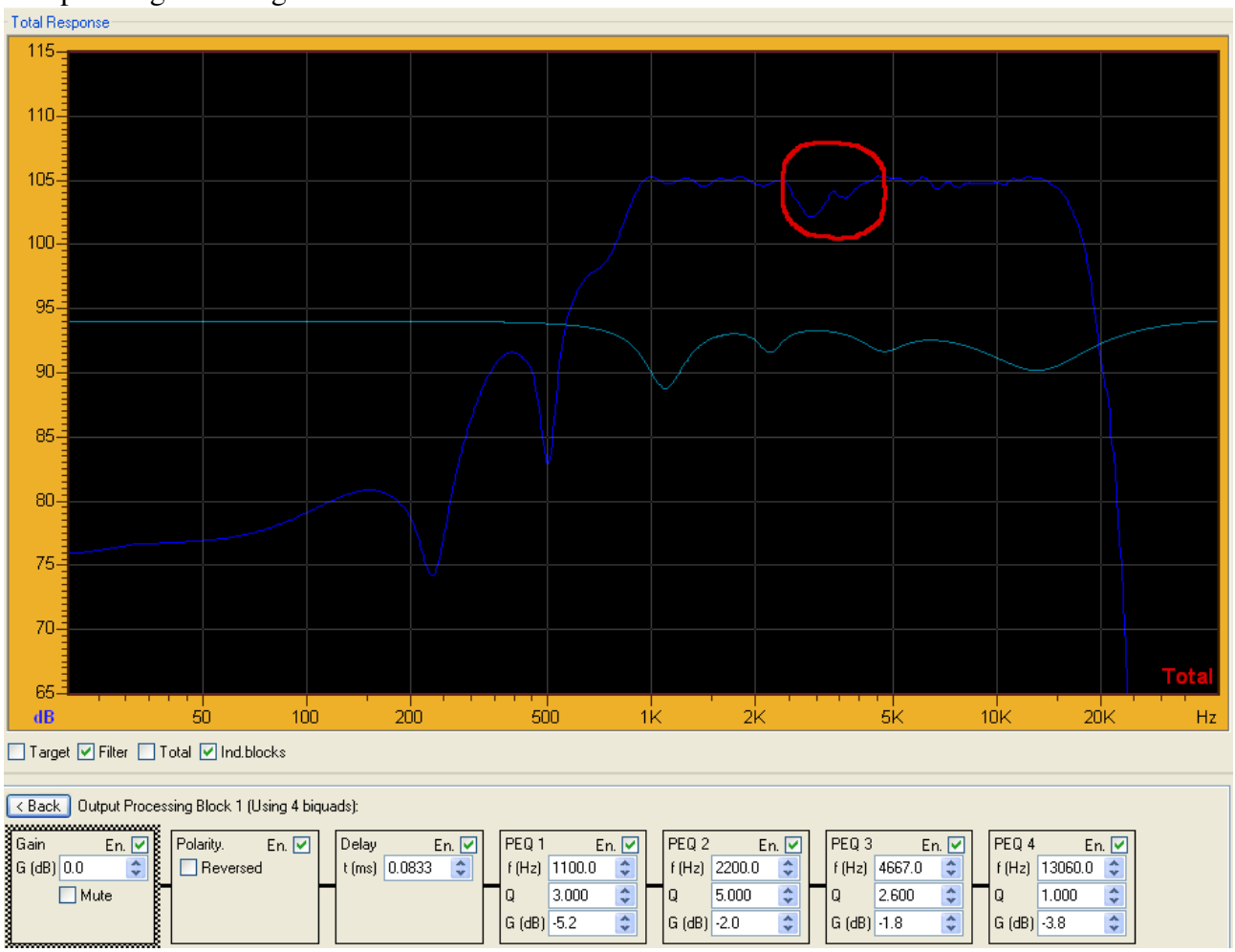
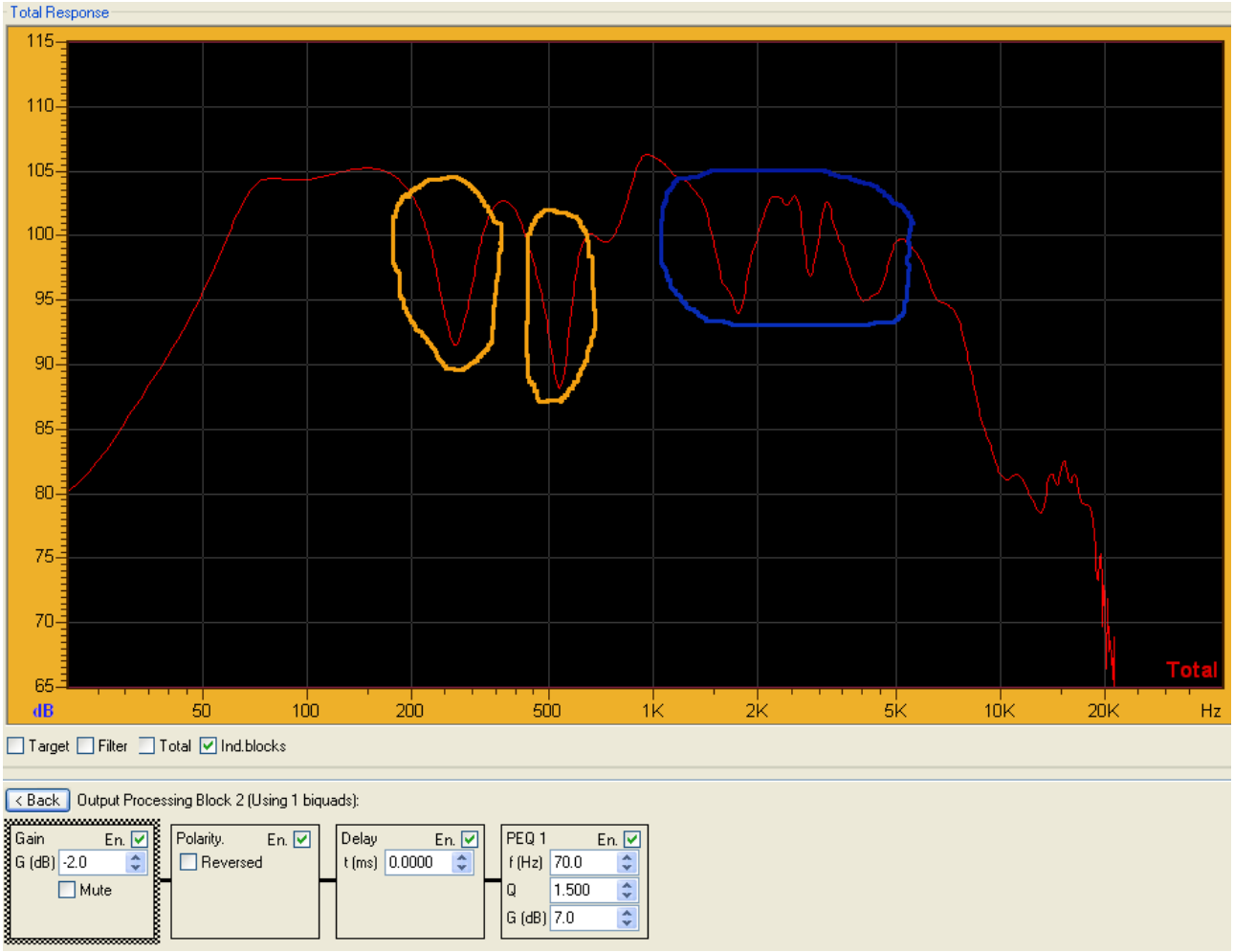
My procedure EQ'ing and filtering an active setup using the XOWII std.

First of all I look closely into the measurements for dips, peak, baffle step etc. and from that I analyse what is driver related, what is box related and what is measurement/room related.
When this is done I think I have an idea of what to do and I combine this with experience of what the used drivers usually are capable of. Example a 1" dome tweeter will perform best when crossover over 2500Hz @ 24dB/oct. – in my opinion anyway – less distortion at higher SPL and therefore less harsh sound. I can't helping focusing on harsh sound when it's there and the pleasure of listening to music is totally gone.

After analysing the measurements I start out EQing the tweeter flat where this makes sense – mostly peaks are levelled out and I might sometimes give a boost a dip with caution. It is very dangerous to boost an edge-diffraction – it will never do any good – it sucks all dynamics out of the response and the speaker gets boring to listen to.

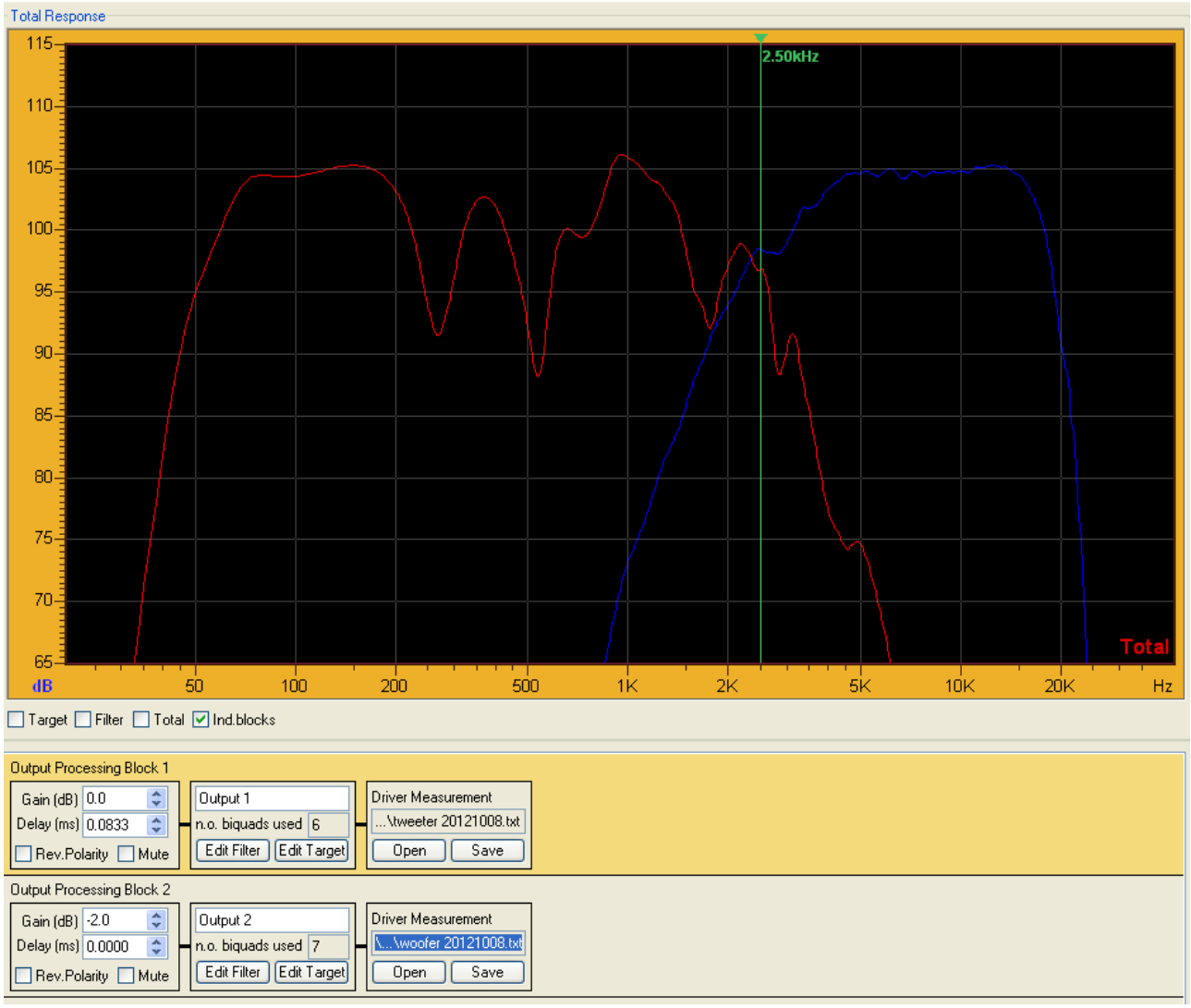


I usually flatten the response to a point minimum 1 octave below the crossover point and in your speaker it is possible to go to 1kHz without to many difficulties. BUT the circled dip is related to the equal placement of the tweeter in the baffle – 3 equally distances from the edge of the front baffle. There is not much to do about this and it's better to leave it as it is. This dip will make it difficult to make the final adjustments of delay of the tweeter for best time alignment as the dip is right where the crossing of the two drivers is desired. As you can see I do not use more than 4 PEQ (parametric EQ filters) to flatten the response – if the response is over processed with lots of PEQ the dynamics is gone IMO.



Then I go ahead with the next in line lower frequency driver in the box – in your case this is the bass/midrange. The bass/mid woofer measurement is dominated of a room reflection (orange circle) and some edge diffraction from the box (blue circle) – I decided not to do anything to those dips and peak – it would be guess work and there is a great possibility of failure. BUT I gave the low end a big boost at 70 Hz with relatively low Q. A boost like this depends upon room and taste and of course required SPL and capability of the specific driver. You have to experiment with this and fine tune it.

The bass/midrange measurement also shows a tendency to level off in the high end – this might be worth looking at too – it would be great with a few more detailed measurements of the bass/midrange driver to determine what really is going on here AS this is where the crossover point is and it is an important place to get it right.



After I have EQed the drivers I implement the High-Pass and Low-Pass filters for the drivers. Normally I use 24dB LR, but it certainly depends upon the driver response. Sometimes you find driver/box combination that shows an acoustical slope of 12dB where you actually want the place the crossover point and you have to combine the acoustical slope with an electrical slope. Example: Bass 24dB electrical versus 12dB acoustical + 12 dB electrical at 300Hz, because the midrange is sitting in a small closed volume and has a small membrane area.
Next thing is setting the levels of the individual drivers right – in your case the bass/midrange is approximately 2 dB up and the gain of Output 2 is set to -2dB.
Now that the overall levels is flat it would normally possible to invert the midrange (in your case the bass/mid woofer) and adjust the delay of the tweeter, by making the cancellation in the crossover point as deep as possible. This is normally in the region of 0,05ms to 0,1ms for countersunk 1” tweeter and 5-6” mid woofers. BUT in your case this is impossible because of the edge diffractions / frequency response mentioned earlier. I simply set this to 0,0833ms by guessing.

I hope you learned some by reading this walkthrough ?!?

Robert