
Posted by [ppkstat](#) on Mon, 22 Aug 2022 21:02:06 GMT

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I'd like to thank everyone for their kind words, and Wayne for all the support. I cannot stress this enough especially for Wayne who answered all my stupid questions with great patience.

That being said I am back from vacation so its measurements time!

This is a nearfield measurement of the port, woofer and driver.

Seems pretty normal as far as I can understand except from the tuning frequency of the cabinet which seems to be around 24Hz. This is exactly the same on both speakers. I have no idea why they turned up like that since I followed every dimension with a 1mm tolerance. Maybe the added volume from the support rings or the less thick insulation?

In order to see if everything went well I tried to do a quasi-anechoic measurement of the speaker, indoors. I laid it on its back and measured it, my high ceiling (5m) would probably helped with this. Below is the response as I got it and then the same response with impulse response gating.

I then tried to merge this response with a combined port-woofer response but I failed completely. I could not match the SPL between the woofer and the port and the formula described in Jeff Bagby's whitepaper produces strange results. This might be due to the fact that the cabinet is tuned that low.

Ok now moving on to the in-room responses. **BIG DISCLAIMER HERE.** What you're about to see has nothing to do with the performance of the speakers, it's all due to my awful, untreated, listening space.

Here is the response from the listening position which is a couch. The are 3 graphs for the center, the left and the right of the couch in this order (1/12 smoothing).

RT60 is horrible averaging around 800m

and the spectro doesn't look very good either

There are several issues with the SPL response. In case you're wondering they sound as bad as they measure. The first issue is poor bass response, especially in the 30-100Hz region, which is followed by a bump. There is massive HF roll of above 2kHz and I think this is something that has to do with the space as I was measuring the same with my previous speakers. There is also a bump around the crossover region which I think also has to do with the space as it was absent on the measurements of the speaker lying flat.

What I do find strange however is that in the published 3pi response the 30-150Hz region is still 3db lower than the mid region. I don't know why this is the case, is this by design or a personal preference? :lol:

In any case the speakers in my listening space need a very heavy amount of equalization. I used EQ APO with a +4db Harman curve in order to get a more balanced result. Below you can see the result but I did the whole procedure a bit hastily. The definitely sound better this way though. These speakers seem to have an excellent polar response so I hope that they will be equalized well in the end. Red is unfiltered and blue is equalized. Subjectively, that boost in the 30-100 region makes a huge difference :)

These need quite a bit more work to sound correctly inside the room. Future attempts will include proper placement (symmetrical and away from walls), Dirac, room treatment and 4 subwoofers. The room is notoriously difficult to treat for several reasons. However, one of the first thing I will do soon is to construct some freestanding thick panels to place behind the speakers in attempt to reduce SBIR issues. I'll keep you posted!

File Attachments

- 1) [nearfield.jpg](#), downloaded 711 times
 - 2) [3.jpg](#), downloaded 704 times
 - 3) [2 \(1\).jpg](#), downloaded 743 times
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