Subject: Help me make the leap
Posted by NEO Dan on Mon, 22 Feb 2010 06:13:09 GMT
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Hi All,
Over the last several years I've posted questions on and off. Now I've decided to commit and build my first arrays. The drivers I've chosen are the PE 299-250 Peerless SDS 6.5" buyout drivers and the JBL PT Waveguide AKA the EconoWave. The SDS are surface mount style frames. Big YEA for not having to countersink all those mid-woofers! I will be using a higher quality driver on the WG, the JBL 2408h. I'm told this driver has a BMS made diaphragm.

I've already had a good listen to the WG driver combo and the SQ gets a big thumbs up. No HARSH sound like the breakup in the D220Ti. For this I used the high efficiency version of the EconoWave crossover.

Here is the only crossover I've tried with the WG and driver so far:

Here is the JBL vs D220Ti, the JBL is the red trace.
note SPL is not at 1 watt

So far I've hashed out this much of the design:
9 SDS mid-woofers per line wired 3Sx3P for a 4 ohm nominal impedance.
The WG is to be @ 52.5" height, that's midway between my sitting/standing ear height.
The enclosure width is 15" with all drivers on 6.5" centers.
The enclosure will have 1.25" corner rounds on the vertical edges.

The primary use for these is as HT mains with a 80hz HPF, but I would like to allow for some flexibility in enclosure alignment.
Initally I have been thinking of going with 100 L tuned to ~70hz as this keeps excursion low and would work for HT use.
I had intended to do this by just cutting ~7" holes in the 3/4" MDF at near the top and bottom of the enclosure but I was told that the long tall aspect ratio of the enclosure was more suited to TL or MLTL alignments and that I would not likely get what I had intended. There was also talk that SQ would suffer so I kind of gave up on that for the moment.
Ideally I would like to be able to block a port to lower the tuning and extend the response for every day 2ch listening at lower levels.

My current train of thought has me at ~150 L with a couple 6"x6" plastic port tubes, this gives me -6 @ 80hz with the 80hz HPF. The tuning should be ~43hz with 2 ports and ~32hz with one.
Dimensions are 84"x15"x10.5 hwd.

My big questions are:
How do I measure this thing to get my crossover right?
Can I get a proper "forward lobe?" that goes straight out AND covers both the sitting and standing

listening positions?

The speakers will be toed-in for good imaging/phantom center. Will having the line of mid-woofers offset to the inside screw things up?

I am ready to build my test mule, but I wanted to ask if there is anything I should change to improve performance. Please point me in the right direction before it's too late.

TIA

Regards,
Dan
