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Subject: Re: Svelte 3pi

Posted by [go94022](#) on Thu, 02 Oct 2014 07:43:02 GMT

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Hi Wayne,

Thanks for the comments. I actually had some very specific questions and the long-winded stuff was just context.

So...

Does the 3pi crossover include BSC or not?

Clarification on your comment on pressure nodes... So the common practice of putting a slot/vent at the bottom of a box is really bad because it excites all modes?

Is the depth of the H290C the same as Eminence, 5.9"? Any thoughts on whether the PH612 PT clone is too short at 4.4"? I am pretty much sold the H290C anyway, because it seems smoother and pattern control holds lower.

Is the crossover frequency for the 4pi lower to match the slightly bigger diaphragm? Doesn't this push the CD harder because it has to play louder and lower?

Do you have any thoughts on feasibility of resistance boxes for (partial) cardioid response?

And please, a copy of the 3pi crossover and plans(?) as a starting point. Still leaning to DE250 and Definimax 4012HO.

More hot air:

Yes, I've read a lot of material on your site. I'm a pretty serious hobbyist. I read the original AES Thiele-Small papers in the late 70s and have been following speaker design informally since then. Familiar with the Econowave, Geddes, SEOS, JBL PT 2-ways. And also the Orion, Gradient/Amphion, Danley Synergy, CBT36, JBL RBI, Kef LS50, and other controlled directivity approaches. Dabbled in Ambiophonics, closely spaced stereo pairs, and other psychoacoustic tricks.

I've been focused on smooth power response and directivity for a long time, and since mid 80s have been running an FFT designed 3-way with graduated driver sizes (8"/4.5"/1"). Similar to the Harman/Revel approach today. With a subwoofer, it has LOTS of headroom without pushing the tweeter.

Have also tried the Behringer B2031, which I think has slightly smoother response than my design (1 fewer crossover). But the dynamics can't match my homebuilt and distortion levels are middling. Amazingly good for the price, though.

Also concerned about pattern flip and vertical polars in 2-way horn/WG designs. Everyone shows horizontal polars, but not vertical pattern, overall power response. I've seen you complain about

that as well. Then I saw your design note about using the crossover lobes to modify vertical polars, which is such a great idea.

So now I'm excited to give this a shot. Expect to get smoother response, more headroom, less distortion (even at low levels) than my old 3-way. I also expect that the narrower pattern (compared to the Harman approach) will result in a closer approximation to LEDE and the master mix - without needing much dead-end treatment. But I do have a few 2x4' homebuilt fiberglass/foam 4" thick panels to play with if needed.

I hope to do some cardioid experiments with old 8" drivers first, and if successful that will probably require more crossover adjustments. Juggling a busy job, kids, family so not sure how fast I can go.

Thanks a bunch, Glen