Subject: It Never Stops! How about PSD2002 in 2PI Towers?
Posted by GarMan on Mon, 02 Feb 2004 20:23:03 GMT
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I do this because I'm sick. I can't leave things alone. Always with the tweaks.I built the 2PI Tower last Fall and since then, have replaced the KSN1038 with an Eminence APT80. Now, I'm thinking of relieving the Alpha10 of its midrange duty by replacing the APT80 with an PSD2002 and crossing over at 1.6K. The Alpha10 sounds good, but it's got a big job, working from 40Hz to 3.5K and beyond. I like what've heard from the 2002 and thought I can bring some of that to my speakers. Besides, if it works for the Thermionic Studio 3, why not for my 2PI?A couple of things I'd like opinions on:Am I totally off base with this tweak? If anyone thinks that I will not hear any improvement at all, appreciate it if you can share your thoughts.In terms of crossover design, would there be a better starting point than the Alpha12/PSD2002 description in Wayne's crossover document? The Alpha10 and Alpha12 response curves are so similar. The both even have the same dip and rise between 800 and 2000 Hz.Gar.

Subject: Re: It Never Stops! How about PSD2002 in 2PI Towers?
Posted by Wayne Parham on Tue, 03 Feb 2004 00:43:43 GMT
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Naturally, I'm partial to my design and particularly from a price/performance standpoint. If you're going to use the PSD2002 with the Alpha 10, you can use the same crossover as other models but make sure to use the appropriate Zobel. Another neat option is ribbon tweeters, but they're pricey too.Once you head up this path, it isn't long before you're into a more powerful system all the way around.

Subject: Re: It Never Stops! How about PSD2002 in 2PI Towers?
Posted by GarMan on Tue, 03 Feb 2004 03:40:58 GMT
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Wayne, I know I've strayed from your original design criteria of low price/high performance. But I have this problem of not being able to leave things alone. You should know what's it's like. I've seen your ride.Gar.

Subject: Re: It Never Stops! How about PSD2002 in 2PI Towers?
Posted by Wayne Parham on Tue, 03 Feb 2004 04:55:31 GMT
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Point taken.

Subject: Speedbump #1
Posted by GarMan on Tue, 03 Feb 2004 20:50:54 GMT
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Curses. I don't have enough room to fit a H290 horn on top of the woofer. However, I can squeeze the H295. I'm thinking this may be a better choice for me because the speakers are used in a pretty big room, and I tend to sit about 15feet from them. The 90 degrees dispersion of these horns seems plenty wide at that distance. I also have a big problem with reflection in the room. I'm hearing way too much of the room and not enough of the speakers. I'm hoping that the constant directivity will help reduce some of that. Does any of this make sense, or am I just fooling myself into accepting what fits on my cabinet?BTW, I found a pretty cool source of reference for CD Horns that might be interesting to some:Gar.
http://www.studio-systems.com/audiofeatures/novdec1998/Clifford/95.htm

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Subject: Re: Speedbump #1
Posted by Wayne Parham on Tue, 03 Feb 2004 20:59:41 GMT
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Maybe put the horn on top? That gives a sort of retro look and it's actually a pretty common arrangement.You can use a stand or make a secondary smaller tweeter cabinet and position the horn with pins so it isn't just a haphazard alignment. To review the significant issues surrounding placement, see the post called "Baffle spacing, phase angles and time alignment, revisited."Then again, that still leaves the original tweeter hole so it may not be an attractive option for you.

Subject: Re: Speedbump #1
Posted by Adrian Mack on Wed, 04 Feb 2004 09:10:11 GMT
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Hi GarThe H290 and H295 are both 90x40deg dispersion. I'm pretty sure the two horns are about the same in the horizontal plane - they both offer tight pattern control here. But the H295 constant directivity horn will have a little more uniform dispersion in the vertical plane at wider angles of dispersion. Technically speaking, that will introduce more possible floor and ceiling reflections than the radial H290. The H295 will need a little more compensation at high frequencies than the H290 - the radial horn has increasing directivity in the vertical plane to acoustically equalize the falling power response in the horizontal plane. The constant directivity horn doesn't do this. 40

degrees is still a very narrow coverage angle so both horn's will introduce only little floor and ceiling reflections anyway. If you want less reflections from walls, then choose a horn with a narrower horizontal coverage angle, or just put the speakers in a bigger room where the walls are far away. IMO, horizontal dispersion is the most important, so I would choose the H290 radial horn. This way less EQ compensation is needed, so sensitivity doesn't need to be lowered too much - the CD horn's need for extra compensation may make sensitivity of the compression horn less than the woofer, unless you start padding that down too, but that's just wasting more db's. Perhaps the H295 may have a different subjective sound than the H290, I don't know. I don't think they are that much different though. You could be pretty safe using the H295. Or you could just get a H290 and put it on top like Wayne suggested. BTW: The difference in physical size of these horns is only 1", actually a little less (except for depth). Can you really not fit a H290?You may find a reflection free sound to be rather "dull". Adrian