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Subject: Tweeter change revisited

Posted by [steve f](#) on Sat, 12 Mar 2011 19:31:01 GMT

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Somebody had to try it. I have few of the larger Hi-Vi tweeters and a pair of the Alpha 8 woofers on hand. After the tweeter change posts, it seemed natural to give it a try.

I built a simple crossover and put the drivers on a table and tried them out. Yes, I know this isn't quite scientific, but I always like to test initially this way. "Pretty good" is my first response. For comparison's sake, I will do the same with the Vifa. (I know that Wayne's design works very well.)

The next step is to build a pair of boxes with split baffles. I will be able to mix and match tweeter pairs that way. The box is probably going to be about 1.6 - 1.75 cu ft and tuned for mid 40's. Something to keep me busier!

Steve

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Subject: Re: Tweeter change revisited

Posted by [steve f](#) on Sat, 12 Mar 2011 22:36:19 GMT

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I forgot to mention that the Hi-Vi tweeters I have are pretty old and not current production. They look similar to, but are not identical to the Parts Express tweeter marketed under their own name.

The Vifa dome is smoother but less detailed. The planar tweeters seem a bit bright and probably need to be padded down a bit. This is not going to be a plug in and play proposition. The good news is I haven't fried any of them ... yet. Unlike the ribbons Bill tried, these can play loud.

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Subject: Re: Tweeter change revisited

Posted by [RDLewis](#) on Tue, 15 Mar 2011 21:07:05 GMT

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Good to see your attempt. Shame it was not the Neo3, its not quite as easy here, as nobody stocks the latter here in the UK. So I may have to pluck up my courage and go for it !

Where bass drivers are concerned, the Alpha 10, looks a better driver for the reasons Wayne has made. Also if you look on the "Prodance" website, you will find both drivers tested. The "10" looks quite a bit better, with the spectral decay, much cleaner, less break up. From what I have seen the 10 has a response at least as good as many more expensive HiFi drivers. It may loose out at the bass end but gains in sensitivity. All a compromise

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Subject: Re: Tweeter change revisited  
Posted by [steve f](#) on Wed, 16 Mar 2011 08:24:21 GMT  
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I chose the 8 over the 10 for a few reasons. I prefer the smooth upper range of the smaller driver. I think that it will integrate better with the planar tweeter. (just my guess) To load properly, the 10 needs a box big enough to house a rottweiler.

Both are very nice drivers. They just have very different box requirements. When I modeled the box, I pretty much got the results I wanted with the alpha 8.

I also use subwoofers that can hit 17 HZ flat.

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Subject: Re: Tweeter change revisited  
Posted by [steve f](#) on Mon, 28 Mar 2011 06:03:57 GMT  
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I completed a pair of test boxes to compare a planar tweeter to the Vifa dome as used by Wayne in the one and two Pi designs. My boxes are larger than the one Pi. At about 1.6 cu feet they are still considerably smaller than the two Pi's. So they dig just a bit deeper than the standard twos but nowhere near the towers.

And the winner is.... the good old Vifa dome. Everybody was at first impressed by the planar units, but after that initial attraction, we all thought the domes worked better. (My poor wife listened to hours of listening tests. Although not an audiophile, she is an avid music lover, and has better ears than anyone else I know.)

Okay, the domes are better. But why? I suspect the planars don't move as much air as the domes at the bottom of their frequency range. People noticed that characteristic. The domes have more impact. Second, the planars are very restricted in the vertical plane, maybe too much so. In my room they seem unable to fill the space as well. I even tried to add them as a super tweeter to a pair of single driver back loaded horns and the sound field collapsed a bit. Perhaps planar types work best where a lot of them can be used for coverage, like a home theater set up.

I also note that most of the really expensive and highly reviewed speakers eschew ribbons and planars. Some of the domes they use are quite expensive so cost isn't a factor.

Steve

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Subject: Re: Tweeter change revisited

Posted by [steve f](#) on Mon, 28 Mar 2011 18:04:27 GMT

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Wayne,

Maybe you should move this topic to the Speakers forum. It's only "kinda' sorta" Pi related. I was hoping to get some comments about tweeter dispersion in non CD designs. Thanks.

Steve

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Subject: Re: Tweeter change revisited

Posted by [Wayne Parham](#) on Mon, 28 Mar 2011 18:31:37 GMT

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Ah, yeah, but probably six one way and half-dozen the other. It's all good!

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Subject: Re: Tweeter change revisited

Posted by [steve f](#) on Thu, 31 Mar 2011 23:53:41 GMT

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My 1 pi tower drivers are breaking in nicely. I'm building a new pair of baffles for them to accommodate the Vifa tweeters. I just table sawed the old ones off the boxes! I had a great time "messing" with the speakers, and I learned a thing or five about tweeter loading and dispersion. If I can find my camera, (it grew legs and hid) I'll post a couple of pics.

I'm done experimenting for awhile. My next project is a pair of basic 3 Pi's. This time I will just buy completed crossovers with the coil & resistor upgrades.

Thanks Wayne for your support of DIY guys.

Steve

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Subject: Re: Tweeter change revisited

Posted by [Wayne Parham](#) on Fri, 01 Apr 2011 01:10:47 GMT

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Subject: Re: Tweeter change revisited  
Posted by [steve f](#) on Fri, 01 Apr 2011 02:36:04 GMT  
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I will eventually. They look great. I'm rebuilding a couple of older turntables and they are sucking up the extra hobby cash. For now the Eminence motors will do nicely. (I wish I had space for corner horns... sigh) Just curious, what are f3 and f10 of the upgraded speaker?

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Subject: three Pi speakers info  
Posted by [Wayne Parham](#) on Fri, 01 Apr 2011 04:03:19 GMT  
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f3 = 50Hz  
f10 = 30Hz

Add subs for extension and modal smoothing. I'm sure you saw this whitepaper already, but just in case:  
High-Fidelity Uniform-Directivity LoudspeakersIt's a good short read that explains a lot of useful concepts used in the constant directivity cornerhorns, matched-directivity two ways, multisubs and flanking subs.

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Subject: Re: three Pi speakers info  
Posted by [steve f](#) on Sun, 03 Apr 2011 09:50:12 GMT  
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Thanks Wayne,

I have read your white paper before; it's a great read, and certainly worth looking at again.

Do I understand that the main advantage of the upgraded woofer path for both the three and four Pi are the copper shorting rings the Eminence drivers lack? And therefore the improvement in the upper range of the woofer response is significant?

Steve

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Subject: Re: three Pi speakers info  
Posted by [Wayne Parham](#) on Sun, 03 Apr 2011 14:33:14 GMT  
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Yes, exactly.

