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Subject: 2Pi - Tilting speaker up for better on axis response and time alignment

Posted by [CRISTIAN M](#) on Mon, 21 Jul 2014 13:43:03 GMT

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Hello again Wayne !

I just hope I'm not bothering you too much already , so I guess this will be my last question before start building the speakers.

Since I will not be able to build the tower versions, I wonder if tilting the front of the speakers upwards a bit would help with the "on axis" response of the tweeter at ear level of a seated or even a standing person.

In my specific case, I figured out that slanting the design 10° would help have tweeters roughly on axis of a person seating 12' away from the speakers...

...but in other forums some people mentioned that some tweeters don't behave well when perfectly on axis (dips at some frequencies), so I wonder what's your opinion on the VIFA's on this regard.

Also I don't know if this will be beneficial or detrimental for the time alignment of the tweeter/woofer combo (maybe this is already accomplished electrically with the crossover).

Your thoughts are higly appreciated !

C.

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Subject: Re: 2Pi - Tilting speaker up for better on axis response and time alignment

Posted by [Wayne Parham](#) on Mon, 21 Jul 2014 19:05:47 GMT

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The speakers are best when listened to on-axis, but horizontal movement up to about 30° is fine too. Further off-axis horizontally gives smooth HF rolloff, so it doesn't get "ugly," it just loses top end.

Vertical movement is another story. You'll run into vertical nulls above and below the speaker, so you really want to listen to them on-axis in the vertical plane. Side-to-side movement is OK, but up-and-down movement is not. Best sound is when you are facing the speakers, somewhere in the general area between woofer and tweeter. You can always put the speakers on stands to raise them to ear level.

going to be your main speakers, I'd suggest augmenting them with subs.

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