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Subject: 4 pi crossover frequency  
Posted by [Mike17W](#) on Sun, 13 Mar 2011 15:25:48 GMT  
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I plan on making a pair of 4 pi speakers but want to use the DE250 and the pi crossover on my 15 inch Altec enclosure with a 16 inch driver until I finish the cabinets. Can you tell me what the crossover frequency is on the 4 pi crossover? I believe my existing Altec crossover is around 1K.

Thanks for all the great information.  
Mike

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Subject: Re: 4 pi crossover optimization  
Posted by [Wayne Parham](#) on Sun, 13 Mar 2011 15:48:22 GMT  
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Do not suppose that the crossover frequency is all that is important, or even that it is most important. Certainly, you do not want to try to push a driver beyond its usable passband but even if you get that part right, if the phase relationship between the two adjacent sound sources isn't right then the forward lobe will be ill-formed. You'll find response ripple in the crossover region, straight on-axis and pretty much everywhere else.

If you are looking for best performance, you can only swap drivers if you redesign the crossovers. You can only "mix and match" drivers with an existing crossover if your expectations are moderate, seeking only a rough approximation of balanced response.

For more information on the crossover design, see the following documents:  
Speaker motors and passive crossover filters  
Crossover optimization for DI-matched two-way speakers  
High-Fidelity Uniform-Directivity Loudspeakers

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Subject: Re: 4 pi crossover optimization  
Posted by [Mike17W](#) on Sun, 13 Mar 2011 16:03:53 GMT  
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Thanks Wayne. I may just push to complete the cabinets.

Mike

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