Subject: New 4 Pi crossover question
Posted by Frank Mena on Mon, 11 Aug 2008 21:14:45 GMT
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After seeing the posts down below I have a question regarding Wayne's new crossover. I have the "old" Theater 4 Pi speakers and crossovers (PD2002? & Emminence Delta 15? woofers)and was wondering if this new crossover would affect the overall sensitivity of the speaker. Would the sensitivity be lowered overall? Thanks in advanceFrank M

Subject: My answer was a few posts down below....Please ignore original post
Posted by Frank Mena on Mon, 11 Aug 2008 21:30:16 GMT
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Bill asked the question and the answer was essentially no decrease in efficiency

Subject: New crossover's off-axis performance
Posted by Wayne Parham on Mon, 11 Aug 2008 22:27:19 GMT
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That's right, there's no decrease in efficiency with the new crossovers. In fact, if you make or buy the new crossover with high quality parts and compare it with an earlier crossover made with average quality parts, the new one might be a little higher sensitivity than the old. We're talking about a fraction of a decibel though, so in either case, it's not an issue.What is better is the response curve is smoother over the entire radiation pattern. The hardest thing to get is the vertical pattern, and this crossover does a better job there. On-axis and anywhere along the 90° horizontal pattern, it is almost a perfectly straight line. Even off-axis vertically, response is smooth to beyond a 50° arc, making a nice full spread of good response with little wasted energy outside the pattern.It is useful to limit the vertical coverage angle, to reduce reflections from the floor and ceiling. In my opinion, the 90°x40° pattern is nice because it provides good room coverage without directing too much energy outside the listening area where it generates reflections. It is very important that the sound field within the pattern be uniform, and that sound outside the pattern be attenuated as much as possible.Some other matched-directivity speakers I've seen don't fare nearly this well off-axis vertically, so much so that a slight movement up or down puts you in a region of terrible response. I've seen some well-revered loudspeakers with null angles so narrow, you don't even have to move above or below the loudspeaker to be in one - they're straight in front, just slightly above and/or below the centerline. In my opinion, if a loudspeaker exhibits this kind of behavior it is not acceptable, no matter what other technical excellence it may achieve. If anti-phase nulls are present close to the forward axis, then the listener will likely be hearing to sound that is colored by them. This is a wost-case coloration, so no matter what else the speaker has to offer, narrow null angles are a deal breaker, in my opinion.