Subject: Question about completed crossovers
Posted by Bill Epstein on Sat, 12 Jul 2008 11:46:31 GMT
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Is there greater loss of efficiency with this design than the original?Should I begin with the 2 watt 45 or go for the 70 watt amp to start?Tonight's the nite.

Subject: Re: Question about completed crossovers
Posted by Wayne Parham on Sat, 12 Jul 2008 16:51:51 GMT
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No loss of efficiency at all. All we've done is juggle a couple values in the tweeter circuit, barely any change there at all. We added series inductance in the woofer circuit, and so there's a smidge of extra DC resistance but that doesn't decrease sensitivity much at all, less than 0.1dB.

Subject: Re: Question about completed crossovers
Posted by Bill Epstein on Sun, 13 Jul 2008 00:42:20 GMT
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Finished wiring it up early this AM but can't decide where to put the terminals. Maybe drill holes and put them just to one side of each solder pad. I got some little Pomonas which should be small enough.

Subject: Re: Question about completed crossovers
Posted by Wayne Parham on Sun, 13 Jul 2008 00:52:58 GMT
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I use surface mount 0.205" spades. Makes cable assemblies easy.

Subject: Re: Update, Update!!! Crossover early impressions
Posted by Bill Epstein on Mon, 14 Jul 2008 22:16:47 GMT
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Played cut 1 of disc 1 Union Station Live, Let Me Touch You For Awhile, my number 1 treble edginess offender. Horrible! Windows broke all over the neighborhood! I hope Ms. Krause has insurance.Played DK's vinyl release, (I can never think of the name) she sounded 8 years old. Sacre Bleu!Pulled the ARC pre-amp and replaced it with the passive pot/switchbox. That's it! Filament voltage dropping resistors must be fried again. Now I can hear the crossovers.The new crossover isn't exactly smooth, I would call it crystal clear and timbre-ific. On that same DK, wait a minute while I look at the album cover.....From This Moment On, Willow Weep For Me has the last refrain preceded by a Soprano Sax riff that, on various review systems has sounded from more or less real to a kids Kazoo: it now exhibits, not just exactly the right timbre but you can actually hear the "reediness" of it. Not in an ultra-detailed, audio-compulsive way, but rather just as though the instrument was right there. You do hear the reed when played live. The 1812s couldn't do that even with some of the super amps I had in the past. That's incredible!Next I played the Szell/Oistrakh/Rostropovich Brahms Double for image and hall ambience. I can almost tell where the holes are in the respective instruments soundboards. This wouldn't be important by itself, indeed, it's an artifact of those 80 dB efficient, diamond tweeter speakers; but the sound with the new crossover places the whole output of the instrument including resonances of strings and wood body so perfectly in the performance space there is a marked increase in the emotion conveyed by the musician. The passive pre-amp has resulted in some loss of the fullness of bass I heard with the LS-1, beyond what the 2226s have done in the past. With either passive or active control the bass has more authority than before though, especially apparent from kick-drum and tom-tom with better clarity of the resonances of plucked and bowed acoustic bass. There is little difference with electric bass apart from a smidge better separation of individual notes. I infer that the 6.8 uF cap has raised the crossover point to 2000 Hz? Wayne? If so, the 2226 must be better over those 400 Hz than the DE-250; I'm thinking that the extra clarity and realistic timbre is coming from JBL and, perhaps, the Zobel is helping reduce the strain of the extra half-octave?Everyone should keep in mind that these capsule impressions are with just under 10 hours on the parts. Also, I used nothing but Dayton caps and resistors except C1 (the attenuator) which is an Obbligato, a $4 part.The Pomona speaker terminals I used (Allied part# 3770) fit the board well and at $7 a piece don't cost a fortune considering they're gold-plated tellurium copper. My total parts cost, including the very expensive 15ga. Jantzen coils, double the size for my 16 ohm woofers, was about $235. BTW, Parts Express was out of 1 mH Jantzen; the Perfect Lay I substituted were sent back due to really shoddy-looking winding. Fortunately, I had an old pair of Perfect Lay in the drawer. The old ones are red, these new ones are green and look so bad I wouldn't trust the winding count!All the issues I've had in the past months with treble edginess, even with the passive, are gone. I now suspect my hand-wired crossovers have a fault: my fault. These new crossovers are just incredible sounding and should get better with more hours and maybe some tastier caps and resistors.Wayne, you've done it again!

Subject: Re: Update, Update!!! Crossover early impressions
Posted by Wayne Parham on Tue, 15 Jul 2008 00:47:17 GMT
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Thanks for taking the time to write in such detail.The value of C3 was changed from 8.2uF to 6.8uF to shift circuit damping ever so slightly. The crossover point wasn't changed. Both woofer

and tweeter share the range from about 1.2kHz to 1.6kHz, with some overlap down to 1kHz and up to 2kHz. This provides constructive summing on-axis as well as off-axis in the vertical plane through an arc of about 50°. The edges of that arc are about 20° above the forward axis and 30° below, so tilt the speakers back 5° or 10°. A small 3" angled riser is just about

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Subject: Re: Update, Update!!! Crossover early impressions
Posted by Matts on Tue, 15 Jul 2008 18:46:12 GMT
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Wayne, I've got the older xover, w/ just a 0.7mH coil on the 2226, and the Eminence style for the comp driver- 8.0 cap, 0.65mH coil, etc. My coils are humongous North Creek custom-wound, and I was wondering if there's any change I could make to add to this or substitute a cap to get some improvement w/out starting all over.Although, I may just start over at some point if need be....however, I'm not in any way unhappy with my current sounds, so I don't NEED to do anything...but...

Subject: Re: Update, Update!!! Crossover early impressions
Posted by Kim Schultz on Wed, 16 Jul 2008 09:31:54 GMT
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Hi Wayne.Could you send me the new crossover plans for the Pi4 ?/Kim

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Posted by Wayne Parham on Wed, 16 Jul 2008 19:22:08 GMT
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Posted by Bill Epstein on Thu, 17 Jul 2008 03:19:35 GMT
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The boards make it oh-so-easy

Subject: Re: Update, Update!!! Crossover early impressions
Posted by Wayne Parham on Fri, 18 Jul 2008 03:54:01 GMT
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The change is subtle. What I would suggest is maybe building a new version of the crossover and comparing the two. Even with good parts, you can build one for about the same cost as a compression driver.

Subject: Re: Update, Update!!! Crossover early impressions
Posted by Matts on Fri, 18 Jul 2008 05:33:47 GMT
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I'll definitely try it at some point. I was wondering if there was some incremental approach, but I'll just try the whole thing when I need a nice little project...