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Subject: Woofer for Econowave  
Posted by [ecc83](#) on Thu, 28 Aug 2008 23:08:08 GMT  
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There is a very interesting discussion at audiokarma about a "econowave" design.<http://www.audiokarma.org/forums/showthread.php?t=150939> Since pi speakers offer great interaction with 2A3 amps i am looking for a woofer concept which i can use with the econowave design. At a first look i think of using the alpha 10 in a 3 cubicfoot enclosure...Any suggestions? Thanks for all responses Frank

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Subject: Re: Woofer for Econowave  
Posted by [Wayne Parham](#) on Fri, 29 Aug 2008 04:08:07 GMT  
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matched-directivity two-way loudspeakers. They are both mature designs, highly optimized and tested for best performance. You'll notice the Econowave uses the same basic crossover circuit, with a bypassed tweeter attenuator providing slightly underdamped tweeter filter via the R1/R2/C1

power response and matches directivity between midwoofer and tweeter. Those are the requirements for a design like this. There are plenty of good woofers suitable for this kind of speaker. I tend to like a slightly overdamped vented alignment, which I feel gives the best overall performance in terms of size/extension/efficiency and it also works out well to conjugate room gain in typical home hifi listening rooms. It's also a great match for distributed subs, providing adequate overlap for blending and smoothing rooms modes. My favorite woofer for this application

shorting ring for low distortion. The cone is well-damped for smooth midrange, a requirement for the crossover frequency needed for a matched-directivity two-way speaker. It provides good extension in a relatively small package, so subwoofers aren't a requirement. It also blends well with distributed subs, making it a very versatile speaker.

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Subject: Re: Woofer for Econowave  
Posted by [ecc83](#) on Fri, 29 Aug 2008 13:23:15 GMT  
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Thank you very much for your advice! As i understand you are not a friend of the alpha10/econowave combo. I think the 3pi (with the delta 12lf) would be a good choice for me. -Can i go with the published econowave crossover? <http://audiokarma.org/forums/attachment.php?attachmentid=90113&d=1210028233>

-Can you send me the 3pi plan?Best regardsFrank

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Subject: Re: Woofer for Econowave

Posted by [Wayne Parham](#) on Fri, 29 Aug 2008 16:52:10 GMT

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I like the Alpha 10, but a driver this small makes the crossover point higher for directivity matching in the horizontal plane. This in turn reduces the angle of the vertical nulls. If the Alpha 10 is used on a horn, the horn sets the pattern but as a direct radiator, the size of the cone is what matters. When matching a direct radiator to a horn, I prefer 12" and 15" drivers. Everything seems to come together in this configuration. When using the Delta 12LFA, I recommend you use the three

crossover circuit use the same basic layout, so it's definitely on the right track. But I'm not sure they've tested it as thoroughly, particularly in regards to baffle placement, phase and null angles. I

tested and mature design.

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Subject: Re: Woofer for Econowave

Posted by [ecc83](#) on Fri, 29 Aug 2008 19:02:00 GMT

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Wayne,thank you very much for your explanations.In fact that i have a 2a3 amp i think i will go with the 4pi- i really love the design of the speaker.Best regardsFrank

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Subject: You've got mail!

Posted by [Wayne Parham](#) on Fri, 29 Aug 2008 23:48:36 GMT

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best for you and build either one.

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Subject: Re: You've got mail!

Posted by [ecc83](#) on Sat, 30 Aug 2008 00:22:29 GMT

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Thanks again!! I hope the 4pi will be a better match with my 2A3 as my Altecs 605A. I can use the Altecs only with an equalizer - after 10kHz no response... and only little Bass. Years ago I built your Thermionic 3 design but it was too big... But I liked the "fat" sound. Frank

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Subject: 605A  
Posted by [ecc83](#) on Sat, 30 Aug 2008 15:47:50 GMT  
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Hello Wayne, maybe you have a suggestion for a PI aligned enclosure for the Altec 605A? fs: 30.3 Hz Re: 9.3 ohm Qts: .25 Qms: 3.01 Qes: .27 Vas: 14.33 cu ft Xmax: 0.15 inch What crossover would you suggest? Best regards Frank

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Subject: Re: 605A  
Posted by [Wayne Parham](#) on Sun, 31 Aug 2008 07:32:48 GMT  
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The Altec 605A driver will work well in boxes from 1.5ft<sup>3</sup> to 6.0ft<sup>3</sup> tuned to 45Hz. PiAlign suggests 3.6ft<sup>3</sup> tuned to 45Hz using a rectangular port 4-3/4" x 8-1/2" and 7-7/8" long.

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Subject: Thanks for your help Wayne!!! (nt)  
Posted by [ecc83](#) on Sun, 31 Aug 2008 09:26:53 GMT  
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