Subject: TAD TD-4001 Passive Crossover Suggestions Wanted!
Posted by Mikey on Thu, 12 Jan 2006 18:08:20 GMT
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Hi All!My next loudspeaker project is a two-way design, utilizing a TAD TD-4001 compression driver and a TAD TL-1601A woofer.The target crossover frequency will be in the 500-650Hz range. In the interim, I'll be using a pair of JBL 2380A horns; but I plan oneventually replacing them with some wooden horns....maybe TH-4001's (if I win the lottery!), or Edgar salad bowls, or ???Does anyone have any experience with a simple passive crossover to run the 4001's? Unfortunately, bi-amping is out of the question,at least in the near future.Also, horn suggestions would be welcome too. What have you guys tried (and liked) in your home environment?Wayne, have you got a 'tried and true' crossover that you've designed for these drivers?Thanks in advance,Mike

Subject: Re: TAD TD-4001 Passive Crossover Suggestions Wanted!
Posted by Wayne Parham on Thu, 12 Jan 2006 18:31:28 GMT
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I built a crossover specifically for a speaker that used a TAD 1602 and 4001. You can find it in the

have that document, write to me or post your E-mail address here and I'll send it to you.

Subject: Re: TAD TD-4001 Passive Crossover Suggestions Wanted!
Posted by spkrman57 on Thu, 12 Jan 2006 18:33:38 GMT
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Use Wayne's 800hz crossover and use the attenuation that gives the same efficiency for both drivers. Even though you are using a 2" compression driver 800hz is a better crossover point than 500hz/600hz due to the vocals being projected better and it is safer for the compression driver.I use GP's 399 driver 1.4" and even though it is rated down to 500hz it projects a sweeter sound at 800hz!Hope this helps.Ron

Subject: Wayne, I've got a copy of the two-way document, but....
Posted by Mikey on Thu, 12 Jan 2006 18:40:58 GMT
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there is no mention of the TAD drivers in the copy I've got. I see Eminence and JBL drivers listed,

but no TAD....maybe I've got an older copy?If you'd like to send another copy, that would be great!mike@protedyne.comThanks in advance!

Subject: Re: Wayne, I've got a copy of the two-way document, but....
Posted by Wayne Parham on Thu, 12 Jan 2006 19:49:04 GMT
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The crossover document has schematics for 500Hz, 600Hz, 800Hz, 1kHz, 1.2kHz and 1.6kHz crossovers. It has a chart showing R1, R2 and C1 values for various levels of tweeter attenuation. All have top-octave compensation that kicks in starting about two octaves above the crossover point.The plans for individual speaker models show which crossover should be used. Most have just a subset of the crossover document showing what is needed.

Subject: Re: TAD TD-4001 Passive Crossover Suggestions Wanted!
Posted by GarMan on Thu, 12 Jan 2006 21:33:05 GMT
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I used to have 2380A on JBL 2441 (2" compression), but my DIY smith horns are a big improvement. Works well with 800Hz XO. Fun and (relatively) simple woodworking project too. You can find details on audioheritage.

Subject: Wayne, need a favor here.
Posted by spkrman57 on Fri, 13 Jan 2006 16:22:10 GMT
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I bought a new computer last year and I lost the crossover document, so could you send me another copy? Plus the one I used to have did not have the 1khz and 1.2khz crossovers. Thanks!By the way, I hope you don't mind, but when on my other forums(audioheritage and audiokarma), I usually reference you when describing my systems. Also there are some who need crossover help and your crossover document has a lot of good info in it which many folks appreciate.I have found the 2nd order lo-pass and 3rd order hi-pass crossover topolgy to mesh very well with horn systems.My other favorite is 1st order with horns and amps less than 3 watts. It is not a exact science though, I have found that actual listening and swapping caps and coils to help fine tune a system that is in a restricted acoustical environment.Another of my "breaking the rules" is using a 16 ohm compression driver with your crossovers without changing R1 and R2 along with the HF comp cap. Then I swap a component and listen until I have listened to the range of values for the best result. I usually don't vary more than 10% of the original values, and less than 5% is I change more than one value.With those little tweaks I have been able to make

up for my rooms faults sometimes with great success.Regards, RonPS: the forum has my e-mail if you don't already have it on file!

Subject: Re: Wayne, need a favor here.
Posted by Wayne Parham on Fri, 13 Jan 2006 18:23:44 GMT
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ran the numbers for myself. I expected that the circuit would be underdamped and there would be

dominates, so is primarily responsible for setting the Q of the HF crossover filter. That sets the flatness of the shelf in the first two octaves above crossover. Components R1, C1 and the reactance of the tweeter set top-octave augmentation.16 ohm tweeter crossover values

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Subject: Smith Horns
Posted by JLapaire on Thu, 19 Jan 2006 14:21:06 GMT
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GarMan,Are you using the Smith horns in a 2-way config? It looks like a good build project, but I don't want to go to 3-way to get top end. I'm using 2380A on 2446J right now and like them. Are you getting a good blend at crossover? I'll check the site you mentioned.Thanks,John

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Subject: Re: TAD TD-4001 Passive Crossover Suggestions Wanted!
Posted by ppvo on Fri, 30 Dec 2011 05:15:09 GMT
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Wayne,
 I'm looking for Xover schematic for my TAD TD4001 and TL1603 if you have it please send me a copy thank you in advance.

Regards,
Phu Vo

Subject: Re: TAD TD-4001 Passive Crossover Suggestions Wanted!
Posted by Wayne Parham on Fri, 30 Dec 2011 15:25:24 GMT
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My best advice would be to follow the suggestions in the thread below:
Notes for the DIYerIn particular, pay attention to the notes, video and schematic in this thread:Crossover optimization for DI-matched two-way speakersAbout ten years ago, I made two

and another used the 4001 compression driver. The 2001 variant was crossed where directivities matched, but the 4001 was crossed a little lower sort of "forcing" the pattern collapse in the crossover region. Note that both crossovers were designed specifically for the horn used and the loudspeaker layout they were being used in. This is a key aspect.

The schematics mentioned in this thread are what I would consider starting points, in that they are very close to what you will want for many drivers when the loudspeaker is designed similar to the configuration I use. That is to say horns mounted on 90° waveguides or radial horns having approximately 40° to 60° vertical beamwidth at HF. You can see an example of this type of crossover, along with a lot of information on how to optimize it in the link above. This approach is described in some detail in the following whitepaper:
High-Fidelity Uniform-Directivity Loudspeakers