Subject: 3-way arrays
Posted by Allan on Wed, 10 Nov 2004 20:00:47 GMT
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Is a 3-way line array practical? In particular, I'm thinking about an array of 10" woofers, 4" mids, and PT2 planar tweeters. I'm asking because I'd like to get a very solid 40hz from the woofers with roughly the same sensitivities of the mids and tweeters. Everything would be on one baffle and the same principles applied to the woofers - spaced as closely as possible to the mids and to each other. I'd be using an active 4th order XO to handle the crossovers to keep the overlap to a minimum.Is there insurmountable combing problems with the third array or is it that no one has just never bothered to do it? I wouldn't mind doing it just for the experience, but if there's something I don't know (HIGHLY likely:-), could someone clue me in? Jim? Bill?Many thanks,Allan

Subject: Re: 3-way arrays
Posted by Jim Griffin on Thu, 11 Nov 2004 00:20:06 GMT
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Allan,It should work as you envision. I assume that you will crossover to the 4" mids in the 100-300 Hz range depending on the capabilities of the your 10's. The issue you may have is how to address baffle step compensation which likely will impact your choice of crossover point between the 10's and 4's. One way is to use some equalization to dial in the appropriate amount of BSC. Having a wide baffle will lower the traditional BSC point vs. normal two ways. Another thought is to use a separate box for the 10's but hard for me to say without more details. The combing issue will come in the crossover between the mids and tweets which is the same as in a two way line array situation. The planar tweeter doesn't like to be crossed lower than 2250 Hz. Hence, you have latitude to locate the crossover in the 2250-3500 Hz area depending on the center to center spacing and how the gain of the mids roll off. Measurement capability will help to get things right in SPL levels and flatness over the operating range between cross points. Having active crossover capability should make things easy. You did not say whether you plan sealed/vented/open enclsoures so it is hard to guessimate how the bass will react. My personal preference is for sealed enclosures for their better transient response. Good luck. Sounds like a heck of an array. Jim

Subject: Re: 3-way arrays
Posted by Bill Fitzmaurice on Thu, 11 Nov 2004 12:32:10 GMT
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I personally use a 2way array crossed at 80 Hz to my Tuba 18 mini horn loaded sub. In my case the sub came first, and it so dwarfed the sound of my previous MTMs that I built the arrays to

have something that could keep up with the SPL of the sub. As to which way to go, both a small horn loaded sub and an array of woofers will give the requesite SPL, but the horn loaded option is far smaller, unobtrusive and cheaper. If you do array you won't need tens to do it, investigate 8s, and look for closeouts. Save $ buying woofers with low wattage and xmax since you don't need much of either when using a lot of them.

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Subject: Re: 3-way arrays
Posted by Allan on Thu, 11 Nov 2004 17:11:00 GMT
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Thanks for the input Jim."Another thought is to use a separate box for the 10's but hard for me to say without more details."That's an idea I've been entertaining as well. " I assume that you will crossover to the 4" mids in the 100-300 Hz range..." Exactly. I have high sensitivity (~97db) subs/bass boxes already, but they really start losing their charm above 100Hz. Everytime I want to think about a new array using say, 3 inch drivers, or any other type of speaker with a mid range that needs crossing at 250-300hz, I'm stuck with no way to bridge the gap between them and the subs. If I build the bass array separately, I could use it for other projects."You did not say whether you plan sealed/vented/open enclsoures so it is hard to guessimate how the bass will react. My personal preference is for sealed enclosures for their better transient response."Ditto here too. I want to use sealed all the way thru.Thanks again.Allan

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Subject: Re: 3-way arrays
Posted by Allan on Thu, 11 Nov 2004 17:29:38 GMT
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Hi Bill - thanks for the response."...so dwarfed the sound of my previous MTMs that I built the arrays to have something that could keep up with the SPL of the sub."I'm already fixed with a pair of subs that match the efficiency of the arrays too. This is the current setup (notice the tweeters on the inside) and after a coupla months of trial and error tweaking and modifying the array, it sounds rediculously good  I started out open baffle but ended up closing them (not exactly sealed though) with fiberglass and 1 inch thick insulation foam on the backs to attenuate the back wave - just not enough room in here to let them operate as OB's.The problem I have is the gap between the subs and the NSB's (or any other mid) that needs to cross higher than 100Hz. I'd like to play with some 3 inch mids, but I need something between them and the subs."If you do array you won't need tens to do it, investigate 8s, and look for closeouts."Yeah, I intend to do that. I'm probably going to find some cheap Goldwoods or some such to check it all out. Thanks again for your input.Allan

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Subject: Re: 3-way arrays

Posted by Bill Fitzmaurice on Fri, 12 Nov 2004 13:13:20 GMT
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Now that I see what you have I'd lean towards an array of fives to fill the midbass hole, placed tight to the mid side of your current array; you don't need anything with an fs lower than 80Hz.