Subject: anyone tried equidistant spacing?
Posted by topogon on Sun, 04 Mar 2007 11:10:13 GMT
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I am planning to make a short array with 8 of 5" woofers each side and 10 tweeters. I will listen in near field only at 3 metres distance. I can only separate the tweeters by 2" which means I will have combing effects from below 10KHz even. My thought is to space the tweeters equidistantly - probably packed tightly together at the middle and expand to maybe 3" apart at the ends of the line. That way I would get earlier nodes but it should blur the frequency where I get nodes making them (hopefully) less noticable.Q1. Has anyone tried this before? Any thoughts whether theoretical or practical?My second option is to scrap the tweeter array and go for a needle design with one tweeter at ear height. (The differing -3dB VRS -6dB distance response won't be a problem as I will only lever use them at one fixed distance.)Q2. At what frequency do the significant spacial clues stop?Will the single tweeter be noticable if I cross over quite high - say over 3KHz? Finally I have also thought of a curved array to eliminate any phase differences. I would just use a baffle with a concave curvature of 3m radius. However I am a bit concerned about focusing the drivers all down to one point and the affect this may have on frequency response as the directivity of the drivers narrows at higher frequencies. (Applies to both woofer and tweeters here)Q3. Any opinions, experiences and, especially, numbers/formulas they can suggest here please?Thanks in advance - John CorneilleMelbourne AustraliaPS I have read the white paper on line arrays and it doesn't cover these items.

Subject: Re: anyone tried equidistant spacing?
Posted by Marlboro on Sun, 04 Mar 2007 12:08:13 GMT
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My thought is to space the tweeters equidistantly - probably packed tightly together at the middle and expand to maybe 3" apart at the ends of the line. That way I would get earlier nodes but it should blur the frequency where I get nodes making them (hopefully) less noticable. Q1. Has anyone tried this before? Any thoughts whether theoretical or practical? ----------I SHOULD THINK THIS WOULD MAKE THE COMBING WORSE.My second option is to scrap the tweeter array and go for a needle design with one tweeter at ear height. (The differing -3dB VRS -6dB distance response won't be a problem as I will only lever use them at one fixed distance.) THIS IS YOUR BETTER CHOICE IN MY OPINION. GET A COUPLE OF REALLY HIGH QULAITY TWEETERS. ITS A SHAME THAT THE SHIPPING WOULD BE SO HIGH FOR 60 DAYTON NEO'S, BUT YOUMIGHT WANT TO ASK THEM. THEY WEIGH HARDLY ANYTHING. ALSO THEY ARE MADE IN CHINA, MAYBE DAYTONWOULD SHIP SOME DIRECTLY TO YOU FROM CHINA THIS WOULD ALLOW YOU TO HAVE A REAL ARRAY WITH THE TWEETER PORTION AND DEPENDING ON HOW TIGHTLY YOU CUT THE FLANCES YOU COUPLD PUSH COMB FILTER DISTORTION OUT TO BEYOND AUDIBILITY.Q2. At what frequency do the significant spacial clues stop? Will the single tweeter be noticable if I cross over quite high - say over 3KHz? YOUR CROSSOVER FOR THE TWEETER WILL DEPEND ON YOUR DISTANCE APART FOR THE MIDRANGES. SINCE YOU ARE USING 5 INCHERS, YOU CAN PROABLY GET THE C-TO-C SPACING AT 5.25 OR LESS. 13560/5.25 = 2582. SO YOU

WOULDN'T WANT TO CROSS ANY HIGHER THAN 2600 HZ. REMEMBER TO GET THE TWEETERS CLOSE TO THE MIDS ALSO SO YOU DON'T HAVE HORIZONTAL COMBING TOO.Finally I have also thought of a curved array to eliminate any phase differences. I would just use a baffle with a concave curvature of 3m radius. However I am a bit concerned about focusing the drivers all down to one point and the affect this may have on frequency response as the directivity of the drivers narrows at higher frequencies. (Applies to both woofer and tweeters here) CAN'T HELP HERE, THOUGH LOST OF PEOPLE DO THAT.HOPE THIS WAS ALITTLE BIT HELPFUL. MAYBE JIM GRIFFIN WILL JUMP IN AND GIVE THE BOTTOM LINES. Email me if you want to contact him directly and I'll give you his email address, or you can search this forum for it, and contact him directly. Jim was very helpful to me when I first started building my array.Marlboro