Subject: Mid to Woofer crossover frequency selection
Posted by goldyrathore on Fri, 31 Oct 2008 15:59:58 GMT
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Hi,I ve purchased some 2.5 inch extended range buyout drivers for mids and Dayton Neos for the tweeters to build a line array.I intend to do the following for each channel of a stereo setup1) Build a vertical line of about 5 feet.2) Place 16 mid drivers at 3" apart starting from top (leaving the bottom 12 inches for the woofer)3) Use a 10" sub woofer in the lower part.What is the maximum frequency that I can cross the sub to the mid?I have a frequency of 300 Hz in mind considering the size of 2.5 inchers. How high can I go?Thanks,Goldy

Subject: Re: Mid to Woofer crossover frequency selection
Posted by Bill Wassilak on Sat, 01 Nov 2008 02:57:04 GMT
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300hz should be ok for subs to mids, but with that 3" gap and the c-t-c distances, I calculate only about 1232Hz@ half a wavlength. Get rid of the 3" gap between the mids and you can go higher.

Subject: Re: Mid to Woofer crossover frequency selection
Posted by Goldy on Sat, 01 Nov 2008 16:38:25 GMT
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Bill, Thanks for your reply. c-t-c is 3" (not 3" between mid drivers). Are there any drawbacks of crossimg this high(or is it an advantage). Later, If I have to add surround channels, I would go for a smaller surround array with lesser number of mid drivers resulting in about 24" gap between the lowest mid driver and the woofer. Is 300 HZ crossover still fine? Will it not cause any audible detrimental effetcs?

Subject: Re: Mid to Woofer crossover frequency selection
Posted by Marlboro on Sun, 02 Nov 2008 23:48:55 GMT
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no can answer this question without seeing data on the actual speaker you purchased.

Subject: Re: Mid to Woofer crossover frequency selection
Posted by goldyrathore on Sun, 30 Nov 2008 10:37:22 GMT
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The drivers are the satellite drivers (2.5" approx.) of creative SBS A300.http://in.creative.com/products/product.asp?category=4&subcategory=789&product=16920&nav=1&listby=usage

Subject: Re: Mid to Woofer crossover frequency selection
Posted by goldyrathore on Sat, 13 Jun 2009 12:24:32 GMT
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Let me rephrase my question

In an array where the mids form a line and a single woofer is placed below it like http://www.parts-express.com/projectshowcase/indexn.cfm?proj ect=Colossi , how does one choose the woofer to mid crossover frequency (ie choose the highest possible crossover frequency, assuming a good overlap in mid and woofer driver responses)?

In case of two drivers side by side, the ctc determines the crossover, however, in the line array case how does one calculate the ctc between the line of mids and the woofer below the line ?

Subject: Re: Mid to Woofer crossover frequency selection
Posted by Wayne Parham on Sat, 13 Jun 2009 16:17:36 GMT
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Subwoofers act differently indoors than they do outdoors because of room reflections. Outdoors,

crossover point. Indoors, this doesn't work because boundary reflections make that impossible unless the room is very large, like an auditorium.

You will have interference nodes at certain frequencies below the Schroeder frequency of the room, typically around 200Hz. The best thing you can do for low frequencies indoors is to spread sound sources around, creating dense interference to smooth the overall sound field. Do a search here for "multiple subs", and study the principles for some good ideas how to setup your system.

Subject: Re: Mid to Woofer crossover frequency selection
Posted by Eric J on Sat, 08 Aug 2009 02:38:06 GMT
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Wayne's answer is most certainly correct, though I'm not sure what he's talking about.

I have a big line array that took me 18 months to design and about a year to build. Electronic analog crossovers, 3 way, with separate amplification for all three ranges: 20 w/ch for total 60 tweeters, 175 w/ch for the total 32 mid, and 350 w/ch for the two 12 inch DVC polyprop 15mm xmax woofers. The cross between the mid and the woofer is 155 hz.

This was arrived at first by looking at the expected ability of the mids to handle lower frequencies using the 24 db/octave crossover, and with the knowledge that I have 16 of them per side to split the total sound up. The have an fz of 85, so with 24 db lopped off per octave, you won't hear much distortion at 155. Also, each speaker is housed in its own 23.5 inch long pvc tube completely separating it from any other speaker with an 1/2 in air space between each tube. The 155hz actually reinforces the bass based on the length of the tube, though at closer to 145hz than the 155 cross.

Secondly, with an analog electronic crossover, I can actually change the crossover frequency and listen. The 155 cutoff was not too high for the woofers, nor too low for the mids. It sounded the best in keeping the midrange clarity up and the woofer distortion down.

Eric J(also called Marlboro on other forums)

Subject: Re: Mid to Woofer crossover frequency selection
Posted by Eric J on Sat, 08 Aug 2009 02:40:28 GMT
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I do recommend the use of a stereo sub set rather than just one. Believe me when I tell you that though everyone says that below certain frequencies bass in omni-directional, unless your sub takes over at below 30hz, you will hear a difference with stereo subs.
