Subject: Is possible "near field" bass response using only 4 drivers ?
Posted by Renato on Thu, 17 Aug 2006 23:50:01 GMT
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Dears,My english is to bad for write, but I will try.. I read withoutproblem!!!!I already finished this Line Array and the sound is very..very good,fabulous... but, the MID of 4" have a FS at 80hz and the result is abad, bad bass response. http://www.mrweb.com.br/fvm/laf2/I use active crossover and for bass, I finished this subwoofer:http://www.mrweb.com.br/fvm/sumario/But now, I think in build 2 modules for bass response in stereo mode, with thisexcelent MID (FS 34hz) to work between range 34hz to 200hzhttp://www.mrweb.com.br/fvm/akron/The BIG question is:Is possible have "near field" bass response using only 4 drivers in atower of 1,80m ??????Because distance C-to-C will be 60cm and this distance is equal to onewave at 573hz. 1/2 wave is 286hz....Thanks,Renato - Brazil

Subject: Re: Is possible "near field" bass response using only 4 drivers ?
Posted by Bill Fitzmaurice on Fri, 18 Aug 2006 12:32:20 GMT
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"Is possible have "near field" bass response using only 4 drivers in atower of 1,80m ??????"Not at a normal listening distance. The farfield of a bass array begins at the array height divided by pi.

Subject: Re: Is possible "near field" bass response using only 4 drivers ?
Posted by Renato on Fri, 18 Aug 2006 12:49:44 GMT
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In this case, only 57cm in listening distance ? Thanks,Renato

Subject: Re: Is possible "near field" bass response using only 4 drivers ?
Posted by Jim Griffin on Sat, 19 Aug 2006 01:27:00 GMT
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Renato,I will disagree somewhat with Bill on his answer. Under the proper conditions, I think that the bass array will work well with your line arrays as I explain in my Near Field Line Array white paper at the link. For a 1.8m array height and if you are in an average residence, you likely will be using your bass arrays so that the floor and ceiling will reinforce and extend the effective length of the bass array. My rule of thumb for bass arrays is that the ceiling and floor reinforcement will extend the array by a factor of 3 (think of an array with a ghost image from the ceiling and from

the floor). Hence, your array is three times longer that its normal height. The equation that I use for near field extension (distance d is the near/far field transition distance) is d = 1.5 x f x h2 where f is the frequency in kHz and h is the height in meters. Thus for a h = 1.8 m array its effective length is modified to be 3 x 1.8 = 5.4 m. Thus at 0.100 Khz (100 Hz) the near field distance extends to 4.37 m. You can use the equation to scale to your situation and specific frequency. Frankly, if I were you in a typical home listening situation, I would use stereo subs (don't have to be bass arrays) below 100 Hz. Then transition to your line arrays above that point. Jim
Near Field Line Array White Paper

Subject: Re: Is possible "near field" bass response using only 4 drivers ?
Posted by Bill Fitzmaurice on Sat, 19 Aug 2006 14:18:38 GMT
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I agree and disagree. As far as sensitivity is concerned a 6 to 12dB increase is likely from boundary reinforcement in the above mentioned scenario, so the box will in effect seem bigger. You might even get something resembling nearfield radiation, since the ceiling and floor would combine to restrict the vertical dispersion angle. But that effect would logically only extend the virtual length of the array to that of the floor to ceiling distance. This is only supposition on my part, though, as I've never measured a six foot bass array in a room with eight foot ceilings to see what happens. As far as an array for below 100Hz is concerned I fully agree that for home use other options than an array are usually better, mostly from a cost/function standpoint. The exception to that would be if you managed to find drivers with the right specs at a cost too low to pass up. A dozen eights at $5 each might make a fine alternative to one 15 at $120, for instance. But I wouldn't use a dozen eights at $20 each in lieu of one fifteen at $120.

Subject: Re: Is possible "near field" bass response using only 4 drivers ?
Posted by Bill Fitzmaurice on Sat, 19 Aug 2006 14:25:54 GMT
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My reaction to using arrays for close listening applications used to be 'why bother', but I've had very positive reports from builders of my SLA cabs who use them as computer monitors, so I wouldn't dismiss the notion out of hand. But as far as bass arrays in average size listening rooms are concerned I doubt that the average listener could tell whether the source was a line or a point even at 12 feet away, as room reflections so dominate response below 100 Hz.

Subject: Re: Is possible "near field" bass response using only 4 drivers ?
Posted by Gene on Tue, 22 Aug 2006 01:35:21 GMT
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Re:"But as far as bass arrays in average size listening rooms are concerned I doubt that the average listener could tell whether the source was a line or a point even at 12 feet away, as room reflections so dominate response below 100 Hz"What if the purpose of the bass array was to dramatically decrease distortion and increase sensitivity of the bass range?

Subject: Re: Is possible "near field" bass response using only 4 drivers ?
Posted by Bill Fitzmaurice on Tue, 22 Aug 2006 22:44:36 GMT
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Once you go below 100Hz there are rapidly diminishing returns as far as arrays go. Yes, they can achieve higher sensitivity and lower distortion than typical direct radiators, but in terms of size don't do so in a smaller package than a basshorn, and in terms of cost don't come close to a basshorn's economy. I use arrays in my HT for the left.center and right channels, and a folded horn for the sub, utilizing each technology where for my needs they do the best job.

Subject: Your tubas are pretty rough.....
Posted by tuber on Sat, 26 Aug 2006 21:39:25 GMT
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.....with 15-20db peaks. Thats what happens when you lay things out by eyeball instead of doing actual design work.
Bill "I don't use M values in my sub horns" Fitzmaurice Design

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Subject: Listen to Jim Griffin
Posted by tuber on Sat, 26 Aug 2006 21:49:43 GMT
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He has done the work and knows what he is talking about.
