Subject: Pro's and con's of mounting two woofers horizontaly?
Posted by Norris Wilson on Thu, 17 Jul 2008 07:28:52 GMT
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I would like to acheive a high efficiency, but am not sure what is the best way to get there. I think the easiest way to achieve close to the desired 100db efficiency is to use multiple drivers. I was wondering what the effects of mounting two midrange drivers horizontally above two horizontally mounted midbass drivers would be? In my situation, the drivers would be JBL 2118J 8" midrange from 300Hz to around 1.5khz, and JBL 2226J 15" midbass woofers from 40Hz to 300Hz.Would the combing effects make it moot in an effort to obtain higher efficiency, creating to many negatives to make it worth the effort?Any thoughts?Norris

Subject: Re: Pro's and con's of mounting two woofers horizontally?
Posted by Wayne Parham on Thu, 17 Jul 2008 17:47:41 GMT
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In general, horizontal spacing is OK for woofers and subs, but not for midrange or tweeters.As an example, a couple of 8" midrange drivers side-by-side used at 1.5kHz will create nulls around 35° left and right of the forward axis, a 70° arc between nulls. That's if you have the drivers physically close, the further apart you space them the narrower the null angle will be.I would strive to maintain constructive summing through a 90° horizontal arc, so those nulls are spaced a bit close for my tastes. Another complication is the fact that a 1.5kHz crossover isn't going to be a brick wall filter, so there will be acoustic energy up to about 3kHz, depending on crossover filter slope. That will cause some cancellation above 1.5kHz at narrower angles which may affect overall system response in the octave above crossover.You could lower the crossover point slightly or use smaller mids closer together. This may get the results you want. I think you could make it work pretty well with some practical optimizations.Another suggestion is to stack your midrange drivers vertically. A wide horizontal pattern is useful for room coverage, but a much narrower vertical pattern is preferred. You don't want the energy directed at the floor or ceiling. So it is desirable to limit the vertical directivity to 40° or 50°. It would be pretty easy to dial in the nulls to be outside this narrow of a pattern in the vertical plane. You will probably find an MTM arrangement has convenient baffle spacing to make this possible.

Subject: Re: Pro's and con's of mounting two woofers horizontally?
Posted by Norris Wilson on Thu, 17 Jul 2008 20:32:58 GMT
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Thanks Wayne for the information.I can't see using two woofers together in the midrange area at all, horizontally or vertically with the issues that you brought to light.I guess the next best solution would be to go up in diameter of the midrange driver to a 10" or 12" in an effort to obtain the

100db efficiency goal.One of my major concerns in using a 12" midrange driver will be the loss of upper midrange to lower treble clarity and frequency extention. I would assume this would complicate the crossover to a 1" exit compression driver and constant directivity horn combination?Would you please tell me what would be the possible pro's and con's of using this size of woofer for midrange duties mated to a CD and horn for constant directivity? For the sake of simplicity, I would be able to bi-amp this 15" midbass to 10" or 12" midrange and 1" CD horn arrangement.Looking at the midrange possibilities, there are a very limited number of drivers available that will work well in the 10" to 12" diameter, especially ones that are affordable.I think the used market may be where I need to look for a midrange.Has anyone used the JBL D123 successfully for midrange duties from, say around 100Hz to 1.5kHz before? Does this driver fair well in the midrange in comparrison to some of the newer crop of drivers. Especially using midrange drivers that are specifically tailored for the frequency range of 100Hz to 200Hz rolling off at 1.5kHz?Any midrange driver suggestions, or ideas for a three-way speaker system using the JBL 2226 as the midbass to 40Hz, and the Beyma CP385Nd 1" compression driver up high?ThanksNorris

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Subject: Re: Pro's and con's of mounting two woofers horizontally?
Posted by Wayne Parham on Fri, 18 Jul 2008 03:58:11 GMT
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go deeper and made midbass-to-midrange smoother. Smaller drivers were easier to mate up high, but made it difficult to blend down low. In the end, I chose a 10" driver for midrange. I'm happy I did.
