Subject: horizontal line array for center.
Posted by justinc on Wed, 23 Mar 2005 14:03:19 GMT
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Im considering doing a horizontal line array for a center channel, i know by doing this it will limit almost all horizontal dispersion, so the array would be about 8-10 feet long. basically spanning the entire seating position. I am wondering if having the baffle in say 3 sections one 3' section point straigt across the middle and the two 3' sides angled slightly out toward the seating area would help out. I also was planning on using just 1 fountek jp3 in the middle for the tweeter, and trying it out with the nsbs first to see how well it worked, then if it does work upgrade to the dayton rs150's with the fountek. any opinions appreciated, thanks

Subject: Re: horizontal line array for center.
Posted by Jim Griffin on Wed, 23 Mar 2005 19:51:58 GMT
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Justin,This idea has potential and you realize that you'll only have good sound within the length (or width in this case ) of the array. I would not angle the sections as you wish to have a near field in the horizontal plane so the radiated energy will flow directly outward from the long array. The array's vertical radiation will be essentially that of an individual woofer so it will cover both seated and standing. The single tweeter is a little problematic as you realize. You would want to orient the JP3 so that the ribbon is vertical (just as in a normal standing MT or MTM style speaker) because you want to have its best coverage within the room in the horizontal plane. You'll lose a some vertical radiation coverage if a listener stands but I'm assuming that the listeners would be seated and roughly the same distance from the sources. The other issue to note is that the line array will have a radiation decay of 3 dB per doubling of distance from the source (near field condition) versus 6 dB per doubling of distance for the tweeter (far field condition). You will have to watch the sensitivity levels of the array (remember array gain increases the overall sensitivity of the woofers) versus the ribbon tweeter so that you can balance out the sound across freqeuncy. I normally like to have my tweeter (or tweeters) a little more sensitive than the woofers. Thus, it is easy to pad the tweeter level down versus reducing the level of the woofers which may mess up the bass enclosure tuning.Good luck,Jim

Subject: Re: horizontal line array for center.
Posted by justinc on Thu, 24 Mar 2005 01:43:30 GMT
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Jim, Thanks alot for the advice on this project. I think I'm going to go ahead and give it a try. How do you feel about the jp2 as compared to the jp3, it has a higher sensitivity therefore would be easier to pad down, instead of padding down the woofer. I have heard though that its vertical and

horizontal dispersion is not near as good as that of the jp3. Thanks for the helpJustin

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Subject: Re: horizontal line array for center.
Posted by Jim Griffin on Thu, 24 Mar 2005 12:13:08 GMT
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Justin,The Fountek JP-3 and JP-2 would have about the same horizontal dispersion (very wide) capabilities. As the shorter ribbon the JP-3, would offer better vertical dispersion. Any ribbon will limit the vertical dispersion more than say a dome tweeter but the longer the ribbon the less vertical dispersion capabilities. The JP-2 would best be used in a line of tweeters so that the listener is covered for both sitting and standing listening.Jim

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Subject: Re: horizontal line array for center.
Posted by Dave Peterschmidt on Sun, 27 Mar 2005 12:40:28 GMT
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justinc,I'm going to be running into the same issue and have been pondering what to do for a center. It seems every choice has some fairly large compromises. The thing I don't like about using a horizontal array is that the center handles most of the voicing in a HT, so centers really need to be well controlled vertically so first reflections don't muddy the voices. Just flopping an array on its side puts the ribbon tweets on their sides also, which means high vertical dispersion. As Jim suggested, you could orient a single tweet vertically, but then you've got point source vs line source issues, both in trying to match the center to the tweeters in your mains, and in trying to balance the center's woofer array with it's own tweeter. (At least I'm assuming you'll have arrays as mains here) I was kicking around some ideas such as using an array on its side but perhaps holding vertical energy down by gluing a strip of sound absorbing material to the baffle above the tweeter array to reduce the HF energy aimed at the ceiling. Right now I'm thinking I'll play around with that and see how it works. If it doesn't, I think I'll just put a third array main behind the screen and use a microperf screen.Let us know how it goes for you. This is a bit of a difficult nut to crack for arrays in HT's, IMO.

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