Subject: Re: Subwoofer array questions
Posted by Marlboro on Fri, 27 Apr 2007 16:53:59 GMT
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The biggest problem I have with woofer arrays is the size of space needed to get to the low notes. If I model my current 2 12 inch 15mm Xmax woofers, to get to 20hz, I have to have more than 7 cu ft in the box. For a dual woofer array I would need 14 cu ft box. For four of them I would need 28 cu ft boxes.I don't believe you can get the FR flat or controllably flat down to 20hz unless you vent them. Sealed boxes will be smaller, but won't go as low.Have you modeled them in WINisD?Marlboro

Subject: Re: Subwoofer array questions
Posted by Marlboro on Fri, 27 Apr 2007 17:47:04 GMT
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In room actual measurements will always be different. WINisD and any computer program always assumes that they are measured in a perfect anechoic chamber.So you're are going to get enough sensitivity and enough speakers so that the stress of equalization will bring them down to the levels you want... Under the circumstances, I would recommend two things which you are probably already doing:electronic crossovers and separate power amps for both right and left channel;anda lot of RMS power.How much power are you planning on using? Equalization will use a lot even with high sensitivity, and spreading across a bunch of woofers.Marlboro

Subject: Re: Subwoofer array questions
Posted by justinc on Fri, 27 Apr 2007 22:23:47 GMT
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you would probably be better off doing 2 columns of 8 12" peerles xls each, 4 really wont give you enough room to get down low at a decent spl. have 4 facing the front and 4 the rear to cancel out all vibrations.When you model 8 of the subs in a small sealed enclosure of 8cuft you will need 1000watts before you run out of xmax at 10hz. You can use your eq to get a maximum of 116db @ 20hz per towerIf you only use 4 subs per tower, they will only be able to handle a total of 250watts before running out of xmax down low at 10hz. And you will only be able to achieve a maximum spl of 107db @ 20hzAs you can see in these two scenarios, by spending a little more money having double the subwoofers will give you a huge increase in performance. Having a array of eton drivers to begin with, I would assume you would want the best out of your subwoofer array also.My personal subwoofer arrays consist of 4 ascendant audio atlas 12" subs each which have 18mm xmax. So they would have a similar output levels to 6 of the peerless xls subwoofers. Looking back on the design, I would like more headroom down low. So when I have time to upgrade I will be using at least 8 of whatever 12" driver I decide on.hope this helpsJustin

Subject: Re: Subwoofer array questions---Justin
Posted by Marlboro on Fri, 27 Apr 2007 22:52:41 GMT
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What size room do you have this in?Marlboro

Subject: Re: Subwoofer array questions---Justin
Posted by Marlboro on Sat, 28 Apr 2007 12:09:03 GMT
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Jose,I was wondering what size room Justin was going to put 8 12 inch woofers into. And i was wondering what he listens to that requires that intense a bass componentMy vented two twelve incher set off my sinuses, and vibrate the pit of my stomach, and well as the cushions I sit on.
Marlboro

Subject: Use CARA to analyze the room
Posted by Wayne Parham on Sat, 28 Apr 2007 14:47:03 GMT
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I suggest using CARA to anaylze the room with respect to woofer placement. Some rooms respond best to symmetrical placements, others to asymmetrical placements. It is entirely dependent on the room shape and the intended listening area.In any case, damping is very important, as much or more than placement. Framed drywall construction helps damp room modes because the walls flex; Rooms with rigid walls (like concrete basements) or those with raised hardwood floors over crawlspaces have their own sets of problems and probably should be dealt with using additional treatment. Bracing and damping of hardwood floors is usually important, bass traps are usually required for concrete basements.
Computer Simulation of Room Acoustics

Subject: Re: Subwoofer array questions
Posted by Rick Craig on Sat, 28 Apr 2007 17:36:08 GMT
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Four XLS drivers per side will do very well with the TacT providing equalization.

Subject: Re: Subwoofer array questions---Justin
Posted by justinc on Sat, 28 Apr 2007 18:56:07 GMT
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the room is close to 6000 cubic feet. One thing you have to remember is that 2 ported 12" subs will have very similar output down low to 6 or 8 sealed subwoofers. They should typically have a 6-9db increase in efficency near the tuning frequency depending on how high or low it is tuned.When using multiple sealed subs, I actually cut the output between 20-80hz anywhere from 6-12db in order to achieve a moderately flat frequency response from 10hz and up. I guess you could also do the reverse and use a linkwitz transform circuit and turn the gain down? So although 8 subwoofers does initially seem like overkill when you use them in this fashion, the overall spl is actually probably less than a big ported system but provides much better accuracy. Think of the big IB systems using 4 18" subs or 12 12" subs, but instead using small sealed boxes.For most music the subs look like they are barely moving using maybe half of their xmax at best. Having multiple subs just coasting along provides much cleaner output with very little distortion. When you start watching movies is when they will use all the xmax from those 10-15hz signals. Using this type of set up, you have no subsonic filter so you really do need the displacement capabilities of lots of subs. It's not so much about how extremely loud. It's more about how low, and detailed at a listenable level.Justin

Subject: Thanks...and....
Posted by Marlboro on Sat, 28 Apr 2007 20:15:32 GMT
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Thanks.....Have you read Curt Campell's article on group delay in vents subs? I'm not sure its related to what you are saying, but it was what caused me not to go with multiple sealed subs when I was going to do so for more accuracy.Here's the url. Like a I say it might be unrelated.http://www.geocities.com/cc00541/group_delay.htmlMarlboro

Subject: Re: Subwoofer array questions
Posted by Rick Craig on Sat, 28 Apr 2007 23:24:13 GMT
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I think either way would be fine.

Subject: Re: Subwoofer array questions
Posted by bwaslo on Sun, 29 Apr 2007 20:53:42 GMT
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Jose,Since you are thinking of a sub array -- have you considered a "DBA"? I just read about these at AVS forum. Seems like a clever way to avoid room effects at sub frequencies. (see at)-http://www.avsforum.com/avs-vb/showthread.php?t=837744