
Subject: Array port lengths

Posted by [greenie512](#) on Mon, 06 Jun 2005 06:48:35 GMT

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This is a continuation of thought from my thread

...<http://audioroundtable.com/ArraySpeakers/messages/529.html> Jim Griffin suggested ports to the back but how do I calculate port lengths. I've tried WINISD which for 17 NBS drivers gives me a port length of 125 cm for a 50 mm dia pipe. But is the initial volume the software calculates for one or all 17 drivers if so it's returning a ridiculously small volume of less than 4 litres for 17 units. Assuming it's the volume for one speaker I'd guess that'd be about 3.25 litres so adjusting to this I get the 125 cm length which is not practical/possible in the 300 mm depth, see http://www.greenie512.net/greenie512/html/future_project.html and <http://www.greenie512.net/greenie512/html/porting.html> Most ports in array designs I've see are quite short where am I going wrong. Cheers - Phil

Subject: Re: Array port lengths

Posted by [Anonymous](#) on Tue, 07 Jun 2005 21:23:56 GMT

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Change the frequency, box volume, and port diameter to whatever you like. For my NSB array I created; * 4 chambers per tower * 4 NSB's per chamber * 1 6" diameter port, 1 3/8" length per chamber in the rear. I chose the 6" diameter for a few reasons. First it gave me a port length that is essentially a hole in the rear wall as I have 3/4" plywood + another 5/8" MDF dampening sheet for 1 3/8" wall thickness. Second, I could only afford ~ 1.5 cu. ft. air space per chamber and I achieved the desired tuning I wanted, ~ 95-100hz with a nice +6dB boost centered around 106 hz. The plan was to make a port door on each port so when you close the door it's now a sealed box and you attenuate the bass or you can open the door slightly to tune lower but you don't really get much output from tuning lower as NSB's don't really move a lot of air. The 100hz peak is nice as it gives you natural boom without over driving the NSB's and you could mate this to a subwoofer. I have one of my array's in the corner, rotated and I get a little bit more bass due to corner loading. People that audition the system are amazed at how much bass I get from the array, they assume I have some woofers 'somewhere' but I don't. The last reason for making a big 6" diameter port is... With all the sound conditioning and dampening I installed, the port is in the 'line of fire' of those NSB's so the rear wave can exit the chamber so reduce reflections off the back wall that may add coloration. If you pay attention to detail you can make an amazing NSB system, pretty neat for 49 cent speakers.
