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Subject: Small array for a small listening room. Help and advice needed.

Posted by [G](#) on Wed, 14 Feb 2007 09:59:03 GMT

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Hi all. I would like to build a small array type speaker using some Tang Band drivers and a single tweeter. I would like to use four 4" drivers and one tweeter per side. My listening room/area is only 12'x12' practically speaking. Also I have a nice little active sub so I only need to get down to 50Hz or so. Is this doable? I could go with six drivers per side if needed but I need a sensitivity of at least 95dB 1w/1m. The drivers I would like to use are here:<http://www.partsexpress.com/pe/showdetl.cfm?&Partnumber=264-828>I haven't decided which tweeter to use yet. Any help or advice are appreciated. Gavin

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Subject: Re: Small array for a small listening room. Help and advice needed.

Posted by [Eric](#) on Thu, 15 Feb 2007 03:43:19 GMT

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Gavin, Not much in this design to work with IMO. I am surely far from an expert, but 12 x 12 room and 4/ 4" drivers a side does not sound like much fun to me at all. Honestly, why don't you get a published kit from PE, or Zaph or something?

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Subject: You are not building an array.....

Posted by [Marlboro](#) on Thu, 15 Feb 2007 12:10:45 GMT

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This is not a Line Array Speaker system. You are building a point source speaker. I recommend that you download Jim Griffin's white paper, or I'll send you a copy. To have an array, the system has to be coupled with the floor and the ceiling, and you have to be in the nearfield for listening. The nearfield is roughly 3 times the array size, which means that you would have to listen to the system less than 4 feet from the speakers, and the size doesn't couple with the floor and the ceiling. And even at this distance you would not be in the nearfield for the tweeter. So you are just building a large point source speaker system. I suggest you consider a D'Appolito MTM design with a couple of larger woofers at the bottom. There is no such thing as a small array. You either have a line array or you don't. Marlboro

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Subject: Re: You are not building an array.....

Posted by [Ivor the Engine Driver](#) on Tue, 20 Feb 2007 21:26:04 GMT

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> To have an array, the system has to be coupled > with the floor and the ceiling, and you have to > be in the nearfield for listening. That might be the worst definition of an array I've ever seen written. No, an array doesn't have to be coupled with anything to be an array, and your listening position has nothing whatsoever to do with what constitutes an array. If you'd like, I'll send you a copy of Griffin's white paper so you can brush up.

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Subject: Re: You are not building an array.....  
Posted by [Marlboro](#) on Wed, 21 Feb 2007 00:58:48 GMT  
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Thanks for sharing.... Have you ever built one?

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Subject: A little bit more on the nearfield and the line array height.....  
Posted by [Marlboro](#) on Wed, 21 Feb 2007 03:41:40 GMT  
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Page 3: "Our goal is to develop a line array loudspeaker system for the home that assures that the listener is in the near field as much as possible." The array described in the report is one that is two way with a woofer system that goes down to a bit below 100hz, and a tweeter system above roughly 1600 to 3000hz, thus a two way system. Usually a low frequency driver is used to complement the array. Thus, Dr. Griffin goes on to describe the required height of both the woofer and the tweeter array portions on page 10. Woofer and Tweeter line height is described specifically. First woofer line height: PAGE 10: ".....Finally, best low frequency coupling to the boundaries occurs wherein the distances between either end of the line and the ceiling and floor are less than a wavelength, respectively. Typically, the woofer line length height needs to be greater than 70% of the room height for effective boundary coupling." Tweeter line height: "....Tweeter Line Height. As for the woofer line length, the ideal tweeter line length would also extend from near the floor to the ceiling. Such a length would assure near field sound radiation for the entire room. Possible implementations would be a very long ribbon/planar tweeter or a large number of small dome tweeters if a floor to ceiling line length is desired. However, either of these implementations would be expensive." Because of the expense, three options are considered. Part of the second is here: "....Listening Position Coverage. Consider also the listening position and whether you desire to cover the sitting position (slightly less than one meter (39.4") above the floor at ear level) only or both standing (typically up to 1.8 m (70.9") height) and sitting positions. Hence, for many situations a tweeter line height would need to be greater than one meter to adequately cover both sitting and standing positions." Both the line height considered here in Jim's paper and the discussion regarding the nearfield make it clear to most readers that there is a requirement for nearfield listening and line height itself to consider that the speaker system is a line array. Anything that does not meet these criteria is not part of the description that the Griffin report describes in its title: "Design Guidelines for Practical

Near Field Line Arrays" It may be a mini line array, but its not a nearfield line array which provides all the benefits described in a line array. Sorry.....Marlboro

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Subject: Re: You are not building an array.....

Posted by [Ivor the Engine Driver](#) on Wed, 21 Feb 2007 15:10:41 GMT

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Yes. Have you?

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Subject: Re: A little bit more on the nearfield and the line array height.....

Posted by [Ivor the Engine Driver](#) on Wed, 21 Feb 2007 15:12:18 GMT

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> It may be a mini line array, but its not a > nearfield line array which provides all the > benefits described in a line array. That isn't what you said, is it? Lesson you should learn: if you're going to be an arrogant know-it-all, make sure you know it all.

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Subject: Re: A little bit more on the nearfield and the line array height.....

Posted by [Wayne Parham](#) on Wed, 21 Feb 2007 16:03:34 GMT

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I didn't really think Marlboro was trying to be a know-it-all, thought instead he was trying to be helpful. I saw the post about boundry loading, and kind of raised my eyebrow too, thinking the array and the mirroring from the boundary were two different things. You can have an array outdoors, loading with multiple cabs instead. You can also have a small array, even one with just four drivers. But I think the point Marlboro was trying to make is that the floor and the ceiling act as reflectors of a vertical array, and if spaced right, make it act like a much longer line. The floor certainly does, and if tall enough, the ceiling does too. I think that's what Marlboro is trying to say.

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Subject: Re: A little bit more on the nearfield and the line array height.....

Posted by [Marlboro](#) on Wed, 21 Feb 2007 17:36:10 GMT

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Jim's white paper explains it clearly. None of the rest of use do much more than quote it. The

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bottom line is that if one is building a line array for an inside dwelling, and one wants all the benefits of it with low distortions and wide sound stage, one is constrained to use those parameters which require a large line that goes 70% of floor to ceiling in the mid/base area, and at least one meter in the tweeter. Everything else is design compromise. If Ivor feels compelled to provide flame bait when he's not sure what the poster is saying, rather than ask a question, then that is his prerogative. I stand by my statement that an array that has four speakers in it is not a line array. I'm sorry if Ivor misunderstood what I was saying. I often suffer from imprecise speech when it comes to these things as I lack a technical background, or an EE degree. It's a hazard. But having built one of these bad boys to Jim's specifications, I assure you that I understand what his white paper says. Kind regards, Marlboro

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Subject: Re: A little bit more on the nearfield and the line array height.....  
Posted by [Ivor the Engine Driver](#) on Wed, 21 Feb 2007 19:17:30 GMT  
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> I think that's what Marlboro is trying to say. He did a poor job of it. Ceiling and floor reflections do not an array make.

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Subject: Re: A little bit more on the nearfield and the line array height.....  
Posted by [Ivor the Engine Driver](#) on Wed, 21 Feb 2007 19:19:52 GMT  
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> But having built one of these bad boys to Jim's specifications, > I assure you that I understand what his white paper says. You certainly didn't get your definition of an array from his paper. Please don't mislead a questioner if you don't know what you're talking about.

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Subject: Issues?  
Posted by [Marlboro](#) on Wed, 21 Feb 2007 19:48:47 GMT  
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I'm afraid I have to disagree with the substance of your comments about line arrays, your interpretations of the Griffin paper, and your arrogant confrontational style of interacting on-line. However, it's the last disagreement which prompts me not to respond to anything you should say in the future. I'm not interested in interacting with people who believe that the best way to win an argument with someone is to start in by insulting them. Better to provide substance for discussion rather than attacking people as a way of offering discussion. I've done nothing to you to invoke such VIRULENT IRE, so I must conclude you have issues that I am not involved in. Good luck in your struggles. Kind regards, Marlboro

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Subject: Since You are so knowledgeable.....  
Posted by [Marlboro](#) on Wed, 21 Feb 2007 19:56:47 GMT  
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Ivor, Perhaps since you are so knowledgeable about this subject you would share what the essential elements in a line array designed for the interior of a dwelling are. You know: numero 1, numero 2, numero 3, etc. Then we could all be enlightened, and we would have assurance that you really want to discuss and are not just looking for a way to start a flame war. Right now your virulent ire toward someone who didn't describe something in the way you would like is way out of proportion to normal internet conversation. Kind regards, Marlboro

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Subject: Tell us a little bit about your line array.  
Posted by [Marlboro](#) on Wed, 21 Feb 2007 21:00:34 GMT  
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Give us a bit of an idea of what you've built in the line array design, so that we can see where you are coming from. marlboro

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Subject: Lighten up  
Posted by [colinhester](#) on Thu, 22 Feb 2007 00:48:08 GMT  
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First time posting here? Take the tone down a notch or two....

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Subject: Re: Lighten up  
Posted by [Ivor the Engine Driver](#) on Mon, 26 Feb 2007 15:44:30 GMT  
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If anyone needs to lighten up, it's the arrogant know-it-alls here. So take your own advice.

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Subject: You were wrong. Period. Live with it.  
Posted by [Ivor the Engine Driver](#) on Mon, 26 Feb 2007 16:22:40 GMT  
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I hardly expressed "virulent ire" at you. However, if I hurt your feelings by pointing out that you were wrong in your definition of an array, well, then I'm sorry your feelings were hurt by my pointing out that you were wrong. And if I unknowingly violated some pansy rule of debate here at Arrays-R-Us by using the truth, then I'm also sorry that such rules are in place.

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Subject: I don't agree with your interpretations, or your attitude. Live with it.

Posted by [Marlboro](#) on Mon, 26 Feb 2007 16:52:37 GMT

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I know. You subscribe to the "I'll talk to anyone, in any way I damn well please" rule. And, the "if you don't like it leave" rule. I wasn't wrong and my feelings are not hurt. I just don't choose to insult people as a way of disagreeing. Its a style of interacting, and one that in real life causes suspensions in public school, and assault charges because of fights. I doubt whether you would talk that way to someone you know, or to a fellow employee at work. But since you don't have to interact with anyone here in real life, you figure you can say anything in any way you want. In my own forum, you would have been banned for inappropriate language. Its your life. Do what you want, I'm sure you will unless someone steps in and stops you.

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Subject: I'll try

Posted by [Ivor the Engine Driver](#) on Mon, 26 Feb 2007 21:48:34 GMT

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> I don't agree with your interpretations, or your > attitude. Live with it. It'll be rough not having the support of the Smartest Man Alive Who Is Never Wrong, but I'll give it a whirl.

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Subject: please please please try

Posted by [Marlboro](#) on Mon, 26 Feb 2007 22:31:54 GMT

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ROTFLMFAO!!! You're a card! You are too funny for words..... But then I believe you already have that support. Why would you need two? OH....gee....I can't stop..... Try Whirled Peas, it'll work for you.

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