
Subject: Line Array Assistance

Posted by [rb132333](#) on Wed, 03 Aug 2011 11:37:30 GMT

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I am new to speaker building and had some questions concerning line arrays. One of the many HUGE benefits of the internet are forums like this and all of the available knowledge and information. Having said that, the amount of knowledge/opinion can make your head spin. Let's get to some of my questions. There seems to be three basic approaches to line arrays; a line of quality mid/woofers mated with a line of ribbon tweeters (Zalytron; GR research), a line of full range drivers usually mated with a single tweeter (Audio Fred) or a line of full range drivers (Murphy array; Audience). Can anyone offer an opinion to which approach they prefer and why? That leads me to my 2nd question, why a single tweeter as opposed to a line of tweeters? My design goals would be sound stage and accuracy (maybe that is everyone's?). Any help that you can provide would be appreciated.

Subject: Re: Line Array Assistance

Posted by [AudioFred](#) on Sat, 06 Aug 2011 12:20:52 GMT

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My preference by far is for a two-way array of woofers with a line of ribbon or planar tweeters. Few speakers can match the scale and dynamic capability of a line array using high quality woofers and tweeters. Unfortunately, a line array using high quality woofers and ribbons or planars will set you back about \$3K or more if you DIY. Also, the crossover design can be unforgiving with a line array, and simple formulae don't seem to work so well, so you need a competent crossover designed for that speaker.

The array of woofers with a single high sensitivity dome tweeter is a compromise whose only purpose is to create a high sensitivity speaker on an extreme budget. It offers some of the characteristics of a line array, but combining a woofer array with a single tweeter doesn't provide the coherence of a two-way single woofer speaker or a woofer-tweeter array.

The full range driver line array, with equalization to counteract the comb filtering produced by an array of 3" drivers, doesn't provide the treble resolution you get from a single high quality tweeter or an array of high quality tweeters.

So here's the bottom line: If I had a budget of about \$1,500 for parts I would build a woofer-tweeter array using a line of relatively inexpensive woofers with a line of Dayton planar tweeters. Selah Audio offers this as the AurArray kit: <http://www.selahaudio.com/id252.html>

With a \$2.5K to \$3K budget I would choose the GR Research LS-6 or LS-9 kits. I've heard both and they are awesome. They aren't advertised on the GR web page, but I understand they are available as kits.

If I won the lottery and had a \$20-30K budget for multi channel amplification, DEQX processing, and ultra high quality drivers, I would have Rick Craig throw a Julietta array together for me and would pay his first class airfare to come over and set it up in the media room of my new mansion.

Or maybe I would just send my Gulfstream jet over to Raleigh to fetch him.
<http://www.selahaudio.com/id195.html>

If I needed a high sensitivity speaker for use with a flea power amp, and my budget were about \$1,000 (for parts plus equalizer) I would consider the Murphy Corner Array or some variation on that design. If my budget were \$400 I would consider the Art Array.

But if I were planning to use the typical 100w/ch solid state amp or a 30 watt/ch or greater tube amp, at each of the above two price points (\$1,000 and \$400) I would choose a two-way point source speaker using higher quality drivers and crossover parts.

Hope this helps.

Subject: Re: Line Array Assistance
Posted by [rb132333](#) on Sun, 07 Aug 2011 23:16:26 GMT
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Thanks so much for the very thorough response. I am not yet ready to commit to an 'expensive' project. But when I am, this will be a ready reference. In the meanwhile, I picked up a bunch of aurasound full ranges and I going to place them into an array type project. I need to 'make some dust' which is probably one of the best ways that I can learn. I am such a novice that I am going to tackle my 1st crossover and I am NOT really looking forward to it. It should be a good learning experience.

Subject: Re: Line Array Assistance
Posted by [Ka7niq](#) on Mon, 02 Jul 2012 20:34:20 GMT
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Great Post Fred!

I heard a line array using full range drivers that had awesome coherency and pretty good high frequency, about as good as a Vifa Dome tweeter.

It was EQ'd of course, and used some 3 inch drivers
