Subject: Why would I not?
Posted by Del Nauman on Sun, 20 Sep 2009 17:37:36 GMT
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I've been a recent lurker since this board has upped in discussion.

Suppose I built a speaker system in MTMW format, as I was thinking of doing: my ultimate system. Each channel would be as follows :

2- Scan-Speak Revelator 15W8530-K00 Cost: $212 each
Very Low distortion midrange speaker

1 - Scan-Speak 602010 ($199) tweeter very low distortion Tweeter

1- 18Sound 6ND430-16 mid woofer Cost: $130

1- And a 12 inch sub woofer at about $140(Dayton RS is one I like with very low distortion)

And I used electronic crossovers and four separate amps.

This combined two channel reference system would cost $1800 for the speakers, maybe $1600 for the amplification, and another $200 for the materials to build the cabinets for a DIY cost of about $3600

Why would I do a line array instead of this? And if I did do a line array, could I build a line array that would blow this away if I spent the same? Or, if I could spend less, what could I spend that would blow it away, and what would that cost?

Del

Subject: Re: Why would I not?
Posted by selahaudio on Mon, 21 Sep 2009 13:10:48 GMT
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It really depends on what your objectives are and what qualities you want in your system. With an array you're spreading a limited budget over several drivers versus just a few for a point source. The largest differences will be in tonality, sensitivity, and soundstage. The point source will have better tonality, especially if it's a 3-way. The array will give you a larger (and in my opinion) more lifelike soundstage with higher sensitivity.

Personally if it's under $1,500 in drivers I tend to prefer a point source because tonality is important to me. Even in the $2500-$3500 range you may find you favor a point source but the arrays do have the edge in dynamics as well. If you can go listen to a set of arrays and decide for

yourself.

Subject: Re: Why would I not?
Posted by Marlboro on Mon, 21 Sep 2009 15:17:57 GMT
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selahaudio wrote on Mon, 21 September 2009 08:10
The point source will have better tonality, especially if it's a 3-way. The array will give you a larger (and in my opinion) more lifelike soundstage with higher sensitivity.

Personally if it's under $2,500 in drivers I tend to prefer a point source because tonality is important to me.

Could you please define what you mean by "tonality"? Its a qualitative word not a quantitative word, and I'm not sure what you are actually talking about.

I found a reference to the word in a description:

"Too often, a loudspeaker will deliver slam, sharp transients, good frequency extension -- everything but accurate timbre or tonality. Trumpets don't sound like trumpets, and cymbals don't sound like cymbals."

IN MY OPINION..... And at least in reference to my line array, I have found that tonality(using this definition) is just as enrapturing in a line array as the sound stage and sensitivity are. I think tonality is in the ears of the beholder, and I'm not sure that you can separate sensitivity and sound stage from it. Since it is in the ear of the beholder, I would tend to listen to the people who have visited me, rather than my own biased view. When people say, "Wow... Its like these musicians are right in the room with me!", I would tend to take that as a measure of tonality accuracy. I do know that at least with the point source speakers I have had in the past, there was never any question that while I was listening to a piano, BUT it never really sounded like a piano in the room with me but more like one sounds when it is far away on stage, and I was in the back of the peanut gallery. I think that would be a measure of tonality.

In my opinion, the timbre and tonality is handled mostly by the midrange speakers. This is the reason why Rod Elliot wishes to have no passive crossovers in the 300-3000hz range. This is the range that telephones use to make sure that you can tell the difference between an exact A440 tone and an A440 tone from a piano, and thus the first 2-4 harmonics of the tone. Low levels of total harmonic distortion should impact this.

Marlboro

Subject: Re: Why would I not?
Posted by selahaudio on Mon, 21 Sep 2009 15:45:29 GMT
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Marlboro wrote on Mon, 21 September 2009 10:17selahaudio wrote on Mon, 21 September 2009 08:10
The point source will have better tonality, especially if it's a 3-way. The array will give you a larger (and in my opinion) more lifelike soundstage with higher sensitivity.

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Could you please define what you mean by "tonality"? Its a qualitative word not a quantitative word, and I'm not sure what you are actually talking about.

Marlboro

Freedom from coloration - such as smoother frequency response and lower distortion.

Subject: Re: Why would I not?
Posted by Marlboro on Mon, 21 Sep 2009 16:11:20 GMT
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That sounds pretty much like the special benefits of a line array.

As the volume goes up the amount of distortion remains low due to the total percentage of sound handled by each speaker. Smoother frequency response could impact too, I agree, but there is a limit to how much difference the human ear can hear. In a strict tone point I sure that some people can hear better than +/- 5 db, but using music, I'm not sure, nor have I seen any research to suggest it, that on multiple plays with real music people can hear the difference between different frequency response patterns. Add to that the researched fact that a) not all humans actually hear the same, and b) that the perception of different ranges of sound differs from person to person, and c) that no one listens to their music in an anechoic chamber so that no matter how "flat" the plot might be in the Anecohoic chamber in listening rooms, and the seat of listening that is all blown to He**.

So the bottom line is probably total harmonic distortion, not frequency response, and line arrays all excell at lowered THD.

Subject: Re: Why would I not?
Posted by selahaudio on Mon, 21 Sep 2009 16:18:11 GMT
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There are driver distortions / response colorations that are present whether you have one or one hundred drivers. An array of them won't help in that regard. The issue of a flat response with good dispersion being very important has been already been proven with tests at Canada's NRC.

Subject: Re: Why would I not?
Posted by Marlboro on Mon, 21 Sep 2009 16:27:29 GMT
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So? A speaker is a speaker, some are good some are bad.

Could you specify what that means. I do not know what "Canada's NRC" means nor do I have the reference. I also don't know when "Good dispersion" came into the discussion. You never mentioned "good disperson" as any element of tonality. But again, the cylindrical wave of sound from a line array is essence of "good dispersion."

I understand your underlying point of view. You sell speakers (Selah) and they are high priced speakers. In this frame of reference, anything that is not top of the line has problems with tonality, dispersion, etc. And of course that's true on paper. But the real question is how much the average Joe can hear these differences, and even more, how many average Joe's actually have the money to pay for these differences.

That's what DIY is all about. Saving big money and doing it yourself.

But each of us has to decide how much we can afford, and how to get the best possible sound for what we can afford: the best dynamic range, the least distortion, AND the most accurate tonality.

Subject: Re: Why would I not?
Posted by selahaudio on Mon, 21 Sep 2009 16:57:57 GMT
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See www.aes.org and look for papers by Floyd Toole. The NRC is Canada's National Research Council. Dispersion is important to tonality as well since it involves the speaker's power response.

Differences can be heard and it doesn't take a golden ear audiophile to be able to appreciate it. Actually most commercial arrays are far more expensive than what we charge and our kits are about the same cost as what you would pay to Madisound or Parts Express. It takes some $ to make a decent array and unfortunately too many builders try to do it really cheap and end up with a bad sounding speaker. Too many posts start with "I bought all these XYZ drivers for a few dollars - how can I make a good line array?"

Subject: Re: Why would I not?
Posted by Marlboro on Mon, 21 Sep 2009 17:18:03 GMT
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RE:

" It takes some $ to make a decent array."

You have a right to your opinion. I don't agree. For about $1800 including all electronics you can

build an outstanding line array that will beat almost all comers at that price in the point source.

I don't want people here to decide that they cannot build their own line array unless they have really big bucks. They can.

End of story.

Subject: Re: Why would I not?
Posted by selahaudio on Mon, 21 Sep 2009 18:49:16 GMT
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I don't understand how you propose that Jim Griffin's science should be adhered to but that verifying the results with measurements isn't important. DIY's post their measurements all the time and there's plenty of information available on how to purchase the equipment / software at a reasonable cost.

Subject: Re: Why would I not?
Posted by selahaudio on Mon, 21 Sep 2009 19:40:26 GMT
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I hope that in this discussion that everyone here will find something beneficial. We all have different opinions and certainly not everything is black and white when it comes to line array design. Debate can be healthy if it leads to a greater understanding of arrays and builders here being able to implement some of the ideas.

Subject: Re: Why would I not?
Posted by selahaudio on Mon, 21 Sep 2009 23:46:48 GMT
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No problem - some barbs are expected in this business so you need fairly thick skin

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Subject: Re: Why would I not?
Posted by Marlboro on Wed, 23 Sep 2009 00:53:17 GMT
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selahaudio wrote on Mon, 21 September 2009 13:49I don't understand how you propose that Jim Griffin's science should be adhered to but that verifying the results with measurements isn't important. DIY's post their measurements all the time and there's plenty of information available on how to purchase the equipment / software at a reasonable cost.

I think that verifying the results are particularly important if:

1. you are selling your design

or

2. your are selling your speaker

I think that you should be prepared to measure the results and modify the system if you need to do so, as JP has had to do with the help of GR systems and perhaps you also. He was uncomfortable with the voicing.

I think that every builder should have a minimal testing system consisting of a high quality measurement mic and appropriate software. I have a calibrated Apex 220 mic, Fuzzbuster measuring software for my Mac Powerbook, and a DOD 830Q equalizer. While this is probably not good enough for professional use, for a DIYer who might have some concerns with his system, its more than adequate.

I did not measure the system, despite my intention to do so since the hearing was the trick for me, and it sounded great. If I was building for someone else, I would measure in their music room. But I was building for ME, and I'm fully satisfied.

Hope that answers your question about my position, and also my ability to do minimal measurement of both frequency response and distortion.

Kind regards,

Marlboro