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Subject: single driver line array

Posted by [JPH](#) on Sat, 22 Dec 2007 10:59:43 GMT

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I know this seems like repeating a stupid question that have been answered many time already but I always wondered if any tryals of an array with only a line of full range drivers would be listenable in real practice and not in theory , untill I got to discover Roger Russell's IDS-25 array ( [www.ids25.com](http://www.ids25.com) )wich seems to contradict all the theory, by just adding an equilizer to boost or reduce the combing effect . I would be really practical not to bother about crossovers , and matching drivers etc ..... and it seems to work !!!Gives me some incentive for a trial !Any comments ?????JP Haggar

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Subject: Re: single driver line array

Posted by [Marlboro](#) on Sat, 22 Dec 2007 13:25:38 GMT

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Sure it works until you compare it to something that covers the bands appropriately. Remember that Russel is not using just any old equalizer, its a specialized equalizer designed specifically for the speakers that he uses. You can't reproduce his equalizer. When you are done with all the hole cutting and all the work, you'd probably be better off with a point source speaker system with high quality speakers. I say that if you have all that money to throw away, and all that time to throw away, Heck! go for it. Just don't come back and complain later that there don't seem to be any highs, and that you just don't have any bass. When I built my three way electronically crossed Tri-amped line array, I turned it on with just the wide range 3.5 inch mid ranges, first. It was fabulous! And then I added the tweeters and then the bass, and discovered how I was deluded by the low distortion in the mid range, the dynamic range, and the giant sound stage. What I didn't have was any highs above 6000 nor any lows below 200. Good luck. Marlboro <http://pub48.bravenet.com/photocenter/album.php?usernum=4095425731&album=48032>

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Subject: the sky may fall

Posted by [lcholke](#) on Sat, 22 Dec 2007 17:48:09 GMT

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Hi JPH, In many applications you may be very happy with the outcome. Just leave room for the Tweeter, so that you can update the design later. X-overs are not so difficult if you get the Behringer analog x-over. The problem is that the waves cancel when one driver 1/2 wavelength farther from the ear than the other. At 10k hz this is .67", 5k would be 1.34, 2.5k would be 2.6". Also the sound will drop off faster at the higher Fq. The applet called "the edge" is great for visualizing diffraction effects. You can see how 2 point sources create a null zone. If you have a

favorite spot that you like to sit in you could focus the array. This will place all the drivers the same distance from the ear. -Linc

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Subject: Re: single driver line array  
Posted by [FredT](#) on Mon, 24 Dec 2007 03:12:32 GMT  
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I heard the IDS and Audience line arrays at the 2006 and 2007 RMAF that use full range drivers, and I liked them both. Comb filtering wasn't a noticable issue with either, but neither offered the "air" you hear with an array of high quality tweeters. The decay of cymbals, bells, etc just isn't as realistic as it is with my Selah Audio XT-8's using Fountek ribbons. Otherwise, they are very good speakers, and there's no reason why you shouldn't build a pair. Driver selection will be important. I wouldn't use anything larger than 3" or fewer than 16 drivers per side. As you said, some equalization will be needed, and you should also plan to use a subwoofer with them. If you're on a tight budget the Behringer DEQ2496 might be a good choice for equalization. If I were building a pair I would shy away from inexpensive drivers. An array reduced the excursion-related distortion of a driver but it doesn't change the sonic signature. Some of the Tang Band drivers with neo magnets like the W3-1346S seem to be good candidates.

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Subject: The sky doesn't fall at 1 wave length in dome tweeters  
Posted by [Marlboro](#) on Thu, 27 Dec 2007 16:00:10 GMT  
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Linc,Its possible that you have not actually built a line array using dome tweeters so you may be simply parroting Jim's best numbers. The reality is that it is impossible to do a 1/2 wavelength in dome tweeters with any known available tweeters. You can use 3/4 inch ND20A;s and cut the flanges so that the c-to-c distance is .91 or so.PE's newer 1/2 inch domes were not available when i built the system, and they might work. However their FR and other characteristics are rather inferior to the ND20A .75 inchers, IMO.I have done this. According to my figures, comb filter distortion doesn't begin to kick in for people in stationary listening positions until above 15Khz. While some people may experience lack of air here I don't. I used 30 ND20A's cut to my specs crossing at 2400hz in each channel(60 total).Sound is fabulous. I discussed the design with Jim Griffin as I was building it. While I could use tone controls or the system DOD constant Q 1/2 octave equalizer to boost the high frequencies to compensate for any comb filter distortion there is no need to do so. It is important to Tri-amp the system, though, to get full value from your tweeter array.Marlboro  
Calipso Line Array Speakers

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Subject: Re: single driver line array  
Posted by [JPH](#) on Fri, 28 Dec 2007 05:17:09 GMT  
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FredTI own a pair of Selah audio RS8 wich are same as XT 8 but with the aluminun cone Dayton's , that I find a bit cold sounding and this you cant change with EQ ( sonic signsture ) , I've added a pair of citrine subs with 500 watts amps and I biamp the RS 8 using the Behringer DCX 2496 Xover , only with this setup the system is now sounding well on almost all materials .I am still trying to improve the sound or to build a line array that is much simpler and much less bulky without loosing the advantages of arrays , hence the idea of a full ranger . As for the choice of drivers I completely agree with you that one should shy away from inexpensive drivers ! but where does inexpensive stop 5, 10, 20,50 >> \$\$\$ for a 3" driver .JP

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Subject: Re: single driver line array  
Posted by [FredT](#) on Sat, 29 Dec 2007 16:46:28 GMT  
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It's hard to pinpoint a dollar value, but an array of three dollar buyout drivers will not mask the inherent distortion of most drivers at this price point. I've heard acceptably good sound from drivers as inexpensive as the Dayton Classic 5.25" in an eight midwoofer array. I would have expected the 7" Dayton RS drivers to sound very good in an array. I built an MTM using these drivers and it sounds very good. I wonder if your RS8 array doesn't need more bsc for its placement in your room. Some speakers that sound very warm in my smaller upstairs listening room sound a bit bass shy in the much larger downstairs room with hardwood floors, lots of glass, etc. Like I suggested, you'll probably like many characteristics of a single driver array, but at some point you may find yourself wishing for a tweeter array to make it perfect. Just my two cents based on my hearing the single driver arrays at the RMAF.

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Subject: Re: single driver line array  
Posted by [Eric](#) on Tue, 15 Jan 2008 04:17:28 GMT  
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I built a pair of arrays using 25 HiVi B3N drivers and a Behringer EQ. I haven't touched it in a while, but power tapering is next. They need a bit of focus. The air folks mention in the tweeter section is absent, but tolerable. I'd like to think I will keep going with them, we'll see how tapering goes. I have a pair of Founteks that I'm re-attaching if the tapering goes well.

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