Subject: K1840 for consultation
Posted by greenie512 on Mon, 02 May 2005 01:38:18 GMT
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It’s public holiday in Australia and I’ve been dreaming up my next project when I haven’t finished the current one – as you do?I’ve decided to try a Line Array for 16 drivers per cabinet. I’ve put a brief outline/sketch of my proposal on my web site – check out: -http://www.greenie512.net/greenie512/html/k1840__new_project.html for details.Am I mad/missing something/should be considering???? – all input welcome gratefully accepted.

Subject: Re: K1840 for consultation
Posted by Bill Wassilak on Mon, 02 May 2005 14:18:57 GMT
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With those speakers you have a cone break-up modes at 7khz you'll need to tame this down, so more than likely you will need a x-over and those tweeters. Also an array this size you will have to power taper it otherwise your going to get sound bloom as they call it from sitting to standing positions.HTHBill W.

Subject: Re: K1840 for consultation
Posted by greenie512 on Tue, 03 May 2005 12:41:04 GMT
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knowing nothing about power tapering I’ve just had a quick “sqizz” at Jim Griffin’s white paper. I was thinking about 16 drivers per box but to taper I think I’ll increase this to 17: -Parallel groups – 3/4/4/6Series connections- 8,9,10/6,7,11,12/4,5,13,14/1,2,3,15,16,17Speaker 1 at base – 17 at topThat I can cope with understanding and I can calculate impedance for uniform parallel branches but could you let me, explain or point to a resource to calculate the formula of the above combination (8 Ohm drivers).Cheers - Phil

Subject: Re: K1840 for consultation
Posted by Bill Wassilak on Tue, 03 May 2005 15:03:18 GMT
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I ran your combo looks like a good power taper for impedance but for the sound, don't know. Your impedance is going to be at 8 ohms with that wiring. The only difference is I'd wire them a little different.Parallel groups - 6/4/4/3Series connections -

1,2,3,4,5,6/7,8,9,10/11,12,13,14/15,16,17Speaker 1 at base - 17 at topI'd try this for starters, like on my line arrays this is about the way there wired, you just have to build and test, listen, make changes test again, etc.etc. until you get the tapering the way you want it.HTHBill W.

Subject: Re: K1840 for consultation
Posted by Anonymous on Tue, 03 May 2005 15:20:15 GMT
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According to your design goals;*Ken isn't into high quality audio in any big way*it plays loud (high SPL) *it plays LOUD .... etc etc etc *Therefore extreme high quality is not an issue hereThe line array of those pioneer 4" midranges will do the trick.Since there is no low pass crossover you should at least tamethe driver to make it sound good. A simple $5 modification will dothe trick. Coat the cone with 4 coats of lacquer. To improve power handling there is another mod, but it cost $30-$40and you have to inject about 5 - 10 tiny drops of ferrofluid on thevoice coil using a syringe. I've done alot of ferrofluid tests with the dust cap off and the only issue with no dust cap is -> the dust.lol -- dust will clog the fluid and gum up the driver over a longtime. It's best to find a way to inject the fluid and keep the capon. The fluid boosts power handling alot, I drove 400 peak for about10 minutes before the driver literally melted and fused the coil stuck. The SPL was mad just from one driver, imagine the array. /heheIf you don't use a high pass crossover there is a good chanceof destroying those drivers with excess bass. You shuold crossthem over ~100 - 200hz at least. To get good bass out of the designyou can port the midranges and tune it to 100hz to give you a nice 6 - 9db boost centered around 100hz. I'm working on an array with those drivers and I have a diaryhere;http://www.caraudioforum.com/vbb3/showthread.php?t=210115Essentially, the drivers will be modded with lacquer and phase plugand maybe ferrofluid, unsure yet. I uploaded some 'sneak peak' low quality pics and video hereof my current project I'm doing for a friend. http://www.caraudioforum.com/vbb3/showthread.php?t=216773If you want to improve the sound alot, add a center horn {ie, compression driver w/lense}. Eminence would offer good results,but PE has cheaper horns you can use. Here is a concept of a 3 way line array with a center horn, those midranges, and some 7" woofers.http://home.pacbell.net/lordpk/misc/Feandil-2.GIFThis design was built recently and the builder loved the sound,he said it was awesome especially with that Eminence horn. He hadto lpad the horn. He powered his array using a QSC 2450 pro amp.If you want more info on that project I can give you his email addressif you have specific questions. Send me an email to my hotmail.comaddress, use thylantyr as the name.

Subject: Re: K1840 for consultation
Posted by Anonymous on Tue, 03 May 2005 15:22:39 GMT
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Don't worry about power tapering. Keep the wiring simple.Remember your design goals.*Ken isn't into high quality audio in any big way*it plays loud (high SPL) *it plays LOUD .... etc etc etc *Therefore extreme high quality is not an issue here/hehehehe

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Subject: Re: K1840 for consultation
Posted by greenie512 on Tue, 03 May 2005 20:08:35 GMT
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Bill, I can see what you are doing - will try it.Yes when I think about it its only a bit? of wire and time to experiment to find a suitable taper. I might even start off with an almost balanced set of 4/5/4/4, so I can hear how the tapering actual effects the sound.Thanks for the help - Phil

Subject: Second thoughts?
Posted by greenie512 on Wed, 04 May 2005 11:11:59 GMT
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Bill– I often drawing thing up to clarify my perception of them and seem to have got “lost” with your power tapering suggestion.Check out my drawing at: -http://www.greenie512.net/greenie512/html/Power_Tapering.html Jim Griffin suggests feeding more power to the central units and less to the outer drivers (left speaker on drawing). Wouldn’t your suggestion (right speaker) simply put more power to the top (or bottom – if I got the groups wrong way around?).Sorry for hassling you when I had said I understood your suggestion earlier – I thought you were adding more to the central group when I first saw your reply.

Subject: Re: K1840 for consultation
Posted by Bill Wassilak on Wed, 04 May 2005 13:19:19 GMT
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Your right about my power tapering scheme it does provide more power to the top drivers, it kind of makes the array act like a J array, like you see at large concerts when they use many boxes of line array elements that come down and start angleing down. But like Jim said you can also do it with less power going to the center drivers and more to the outer drivers. This works to, because I heard Fred Thompsons Fred arrays this past weekend and this is how he did his power tapering. His power tapering scheme is 2/3/3/2 in series then all paralleled and they sounded good. Like I said build and test.
Link to the Fred arrays

Subject: Re: K1840 for consultation
Posted by Jim Griffin on Wed, 04 May 2005 13:52:14 GMT
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Bill,I really thinking that power tapering needs to be symmetrical with less power going to the outer drivers. Now as I have said power tapering needs to be an adjustment which balances the power injected into the room at the low end of the frequency band. So take care to work the power/room balance equation.Jim

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Subject: Re: K1840 for consultation
Posted by Bill Wassilak on Wed, 04 May 2005 14:24:45 GMT
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That's the nice thing about building these arrays, you can try different things with the power tapering to see what it sounds like and what it does in a room. I may just throw some drivers on an open baffle to try different tapering schemes just to see what it does and how it affects the sound, just sort of a diy experiments type of thing for the fun of it, now that I have my main arrays built and are happy with them.Take care,Bill W.

Subject: Re: K1840 for consultation
Posted by greenie512 on Thu, 05 May 2005 04:27:11 GMT
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Jim<<So take care to work the power/room balance equation>>Is there an actual equation or is it more trail amd error for any combination of array and room!Cheers - Phil

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Subject: Re: K1840 for consultation
Posted by Jim Griffin on Thu, 05 May 2005 11:31:22 GMT
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Phil,Not an equation per se but rather a cut and try to achieve a good balance within the room.Jim

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