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Subject: Power Tapering

Posted by [Paul L.](#) on Tue, 29 Mar 2005 06:46:58 GMT

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I am building an array with 10-4ohm drivers per side. I've seen people suggest a 3/2/2/3 taper, and I've read everything I can find on the subject, but I still can't get my mind to grasp the actual wiring for this set up. Can someone please explain the needed combination of series and parallel that I will need? Final impedance is not terribly important because my amp can drive a 2ohm load without worry. Thanks

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Subject: Re: Power Tapering

Posted by [Jim Griffin](#) on Tue, 29 Mar 2005 13:04:57 GMT

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Paul, My white paper shows an example of power tapering so you can get a visual from that case. One way to power taper in a 3/2/2/3 configuration is to first series connect the top 3 woofers in your array. That is, from the upper most driver, connect the minus terminal of this top driver to the plus terminal of the next driver down and then repeat for the third driver. Thus you will yield a series string of three drivers with the plus terminal of the top driver and minus terminal of the bottom driver in the string not yet connected. Now repeat the same sort of wiring for the next sets of two, two, and three drivers with the drivers in each set similarly connected. Note that the uppermost plus terminal and lower most minus terminal in each set are as of yet unconnected. For the parallel connections: Now you have 4 sets of drivers--a series connection of three, a series of two, another series of two, and a final series three from top to bottom of the array. Now connect the unconnected (so far) plus terminals together and feed it to the plus side of the crossover. Connect the minus terminals of the so far unconnected terminals together and connect that to the minus side of the crossover. That places the four sets of drivers in parallel. If you have an ohmmeter you can verify the connections along the way as you make the various series and parallel connections. Be sure to observe and check the polarities as you go along. Jim  
Near Field Line Array White Paper

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Subject: Re: Power Tapering

Posted by [Paul L.](#) on Tue, 29 Mar 2005 19:08:57 GMT

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Thank you Jim. I think you explained what I needed to know even if I wasn't as clear as I could have been. I was thinking that the middle two drivers needed to be wired in such a way as to present a load half of what the outer six drivers would present, then the other two drivers (4&7) would split the difference. So let's say that drivers 1,2,3,8,9,10 gave an 8ohm load, drivers 4,7 a 6ohm load, and drivers 5,6 a 4ohm load. This to me was a taper, and I was looking for three

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levels. It seems there are only two power levels in a 3/2/2/3 taper. If I understand you correctly, drivers 1,2,3,8,9,10 will give the same load (2 sets of 12ohms each), and drivers 4,5,6,7 will also give the same load (2 sets of 8ohms each). When these are wired in parallel, there will be a total load of 2.40 ohms. Correct? Thank you again for your help.

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Subject: Re: Power Tapering

Posted by [Jim Griffin](#) on Tue, 29 Mar 2005 20:43:53 GMT

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Paul, You are correct on the 2.4 ohms array impedance if you start with nominal 4 ohms drivers. If the drivers were 8 ohms nominal, then the 3/2/2/3 feed will yield an array impedance of 4.8 ohms. Now you can still achieve the same power ratio (1.5 to 1 in the case of the 3/2/2/3 connection) if you do a 6/4 connection with your 4 ohms drivers. What you do is to connect drivers 1, 2, 3, 8, 9, and 10 in series for the 6 and then connect 4, 5, 6, and 7 together to get the 4. Then parallel the two sets of seriesed drivers. The array impedance would be 9.6 ohms which may be more amplifier friendly if you have an amp that has problems with less than 4 ohms loads.

Jim

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