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Subject: 7 PI digital to passive

Posted by [mk15](#) on Fri, 23 Mar 2018 18:26:20 GMT

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Hi Wayne,

I have been enjoying my 7 PIs for quite some time now. Used tri-way class D amps with miniDSP.

I always wanted to get a taste of class A amplification and going to build one. My plan to change to bi-amping with a single Class A amp handling mids+highs. Hence a switch to passive crossover.

Could you please send me a schematics for 3-way 7 PI.

I built a midhorn a little larger than on your plans so its back almost touches the corner walls.

Also JBL2226 in my system are 16 ohms, should I use a smaller inductor value ?

And what wire gauge/DCR do you use in your crossover inductors ?

Thanks in advance,  
Michael

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Subject: Re: 7 PI digital to passive

Posted by [Wayne Parham](#) on Sat, 24 Mar 2018 16:33:28 GMT

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You've got mail!

The minimum wire size you should use on coils is 20 gauge, but I suggest going bigger than that. We use 18 gauge air-core coils everywhere except the woofer, which has a 16 gauge laminated iron-core coil. An upgrade to 15 gauge is available.

I have a requirement of DCR less than 25% of the load, but I prefer to keep DCR under 10%, e.g.

I'm using parts that exceed the goal by a wide margin. For example, the coil in the woofer circuit

well under the 10% goal.

coil in the midhorn circuit. Of course, the midhorn is padded so DCR isn't as critical in this part of

And yes, when using a 2226J, go with a 12mH coil in the woofer circuit. As I said above, don't skimp on the wire gauge.

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Subject: Re: 7 PI digital to passive  
Posted by [mk15](#) on Sat, 24 Mar 2018 19:27:18 GMT  
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Thanks very much Wayne.

So in your opinion it is not detrimental to use laminated iron-core coils for the woofer ?  
What do you think about possibility of active filter for the woofer ?

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Subject: Re: 7 PI digital to passive  
Posted by [Wayne Parham](#) on Sun, 25 Mar 2018 16:08:54 GMT  
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The woofer circuit in this design isn't critical. It's low-passed very gradually, with plenty of overlap with the midhorn to smooth vertical modes. The only thing that's required of the woofer circuit is to attenuate the very high frequencies.

As for the coil, as long as it doesn't become saturated, laminated cores are fine. Air core coils prevent this possibility but a good iron core like the Erse Super-Q works very well and sounds great.

It doesn't even come close to saturation at the maximum power level. At 600 watts, there's 8 amps flowing through the coil and it doesn't saturate until 20 amps. So laminated iron core coils are just like output transformers - use them within their limits and they're fine.

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