Subject: A few fun things to try
Posted by Wayne Parham on Tue, 19 Oct 2004 04:55:34 GMT
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Hi Dave,Zobels are very forgiving of component tolerance. You've got over 25% variance in either the resistive or the reactive component before you can even notice it. So you don't realy need very accurate measurements to know enough to get the Zobel values right.On the other hand, I'm not sure that will help you much here. Without a crossover or other reactive components in the circuit, the Zobel is of limited benefit, in my opinion. In fact, from the KISS perspective, I'd probably prefer to omit it. With crossovers, it's sometimes pretty important but for what you're doing, probably not. It will give your tube amp a more resistive load at higher frequencies though, so I don't suppose it would hurt to give it a try. Use a resistor that's the same value as the driver's advertised impedance, which should be about 1.25 times the DC resistance. Try a 20uF cap in series, then maybe a 30uF and a 40uF. You'll probably find only subtle differences between these three values.Here are a couple things I might be tempted to try. One is a simple electrical filter and the other is a seat-of-your pants acoustic filter. I see that you are opposed to electrical filters, but I'll mention them anyway. The suggestion is free. At 5kHz, the coil inductance value you'd need for a notch filter gets pretty small. You can buy coils that are wound with such large conductors that DC resistance is very small. So that will help you with your concerns about insertion loss. Get a big-ol coil between 0.3mH and 1.0mH and put it in parallel with a resistor of approximately 1.25 - 1.5 times the same value as the driver's advertised impedance. Use a polypropylene capacitor between 2.2uF and 4.7uF in parallel with that. Assuming the EV 12 is 8 ohms as I recall, I'd start with 10 ohms, 0.3mH and 3.3uF all in parallel, and put this little wad of components in series with the driver.The mathmematics show this circuit to have only very subtle response impact and phase change is small too. The resistor across the tank circuit really damps it and it keeps it from doing much. And if you use a good non-inductive resistor, a large-conductor, low-DCR air-core coil and a polypropylene film/foil capacitor, you'll be using all good components too. So you can feel good about that. It's worth a try.Or if you're dead set against the electronics, how about just listening off-axis? At 5kHz, the radiator is beaming so if you turn it 45o, you'll definitely knock off that 6dB peak. You might find that 30o is enough. Just make the baffle tilted; Maybe you can make a very interesting speaker with an angled baffle of some sort. With Qts=1.2, your driver should probably be used in a very large box or open baffle, so it might be cool to use a single sheet or hinged-set open baffle that can be moved or rotated like a floor-standing mirror or partition. That way you can position it where it sounds best in any room.Just a few thoughts, hope some sound fun.Wayne