Subject: By-Pass caps?
Posted by BillEpstein on Mon, 07 Mar 2005 21:16:14 GMT
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I switched around my cross-overs yesterday so the JBL/Altec is crossed at 1600 with a .33 cap on the tweeter instead of 800 Hz with .47. I like the greater contribution to the mid-range of the 2226 but am missing some high's, I think. I don;t have another .47 cap but I do have some nice .1's. I can parallel the .1 with the .33, right? And see if that is brighter?

Subject: Re: By-Pass caps?
Posted by Wayne Parham on Mon, 07 Mar 2005 23:30:11 GMT
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That's right, Bill. You can add a 0.1uF cap to the 0.33uF cap by connecting them in parallel to form 0.43uF. If you add a couple of 0.1uF per side, you'll have 0.53uF. Raising capacitance across R1 will bring up the treble and bring it in a little sooner.The stock value is 0.47uF for all networks from 6dB to 12dB. The resistors R1 and R2 set the padding level:Network R1 R2
C1================================ 6dB 12 30 0.47 8dB 12 20
0.4710dB 16 16 0.4712dB 25 16
0.47================================

Subject: Re: Just what the doc ordered
Posted by BillEpstein on Wed, 09 Mar 2005 01:13:21 GMT
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Screwed gators on the .1 caps and hooked'm up. Just enough more treble to get back the "air" and "bite" on the upper octaves. Gonna play with resistor combinations this weekend.

Subject: Re: Do R1 and R2 change with a 16 ohm driver?
Posted by BillEpstein on Wed, 09 Mar 2005 23:22:19 GMT
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And R1 goes up as R2 goes down with increasing attenuation. Is there a simple answer for thaT?Plus, if a comp driver is known to be 101dB efficient and the woofer 93 dB, would one just look for the attenuation values closest to 8dB? Or is there more to it than that?

Subject: Re: Do R1 and R2 change with a 16 ohm driver?
Posted by Wayne Parham on Thu, 10 Mar 2005 02:51:54 GMT
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It isn't quite as simple as that in practice, but that's the idea. The thing is that R2 sets the load for the crossover, so as the value is increased, the Q of the circuit increases. That raises the peak at resonance, and sets the bottom part of the response just like the port in an EBS cabinet does. We're looking for a shelf of constant amplitude, and setting the load to do it. Then, the value of R1 basically sets the attenuation. The balance between R1, R2 and the driver's impedance all come together to set the amount of padding, and the lower shelf. You want that part flat. Then capacitor C1 and resistor R1 work together with rising driver impedance (from voice coil inductance) to create the rising response for top octave compansation.

That's why I sometimes recommend Spice. The models are already made and included in the archive, so all you have to do it to plug in your values of driver impedance and inductance and for R1, R2 and C1 and it will plot a response curve for you.

But you might like just giving the iron some heat and trying values of R1=50, R2=16 and C1=0.33uF. That's a pretty good starting point, and it's set to use the 8 ohm crossover. I ran the numbers on Spice one time and that's what I came up with. It was probably for a 95dB woofer or thereabouts, so it will probably be a good starting point.
16 ohm tweeter crossover values