Subject: Compensation circuits
Posted by Larry Acklin on Thu, 19 Feb 2004 15:22:55 GMT
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Hi all...Is it possible to use a tweeter compensation circuit without using the passive crossover? I'm thinking about the PA thing, where I most usually bi or tri amp, and, therefore, do not need the passive crossover. So i'm thinking about R1, R2, C1 in the stardard configuration, fed by my amp dedicated to the range of frequencies (2Khz and up, for instance).Comments welcome.Larry Acklin

Subject: Re: Compensation circuits
Posted by Wayne Parham on Thu, 19 Feb 2004 18:41:32 GMT
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You can biamp and use compensation components on the output, but if you put compensation on the input, you can generally use 10x less power. That gives you a lot more choices for suitable

shouldn't really be viewed as a stand-alone network. The response curve of these three parts by

when used in the circuit having series (high-pass crossover) capacitance and (voice-coil) inductance, some peaking is introduced which raises the bottom portion of the response curve and makes a shelved region of flat response.The resonance caused by crossover capacitance and voice coil inductance can be seen similarly to the resonance caused by a loudspeaker port. Using a specific Zobel or damping resistor, one can set the Q of the circuit so that response is flat, just like they would set the characteristics of a ported cabinet to make woofer response flat. But one can also choose to make the system underdamped or overdamped, or to create a shelved response like an EBS. As an example of this shelved response, see the response curve of an

crossover essentially employs an EBS alignment with electrical components. It is specifically designed to be used with compression horns that are flat for a couple of octaves before they begin

brings us back to your situation. If we were to use just R1, R2 and C1, we may not get the response curve we need because the system depends on voice-coil inductance and series crossover capacitance. You'll still have voice-coil inductance, but you might not have the right amount of series capacitance in the output circuit.That leaves you with a few choices:1. Active

compensation components and switch the active crossover EQ on.2. You can build a filter circuit for the input of your amplifier. This is a preamp-level compensation circuit that provides response

Compensation components R1, R2 and C1 can be installed in the output circuit, including the right amount of series capacitance ahead of the compensation components. The series capacitance will also serve as a protection component, and will form an additional first-order filter, so that should be included in your design analysis.

Subject: Re: Compensation circuits
Posted by Larry Acklin on Thu, 19 Feb 2004 19:53:03 GMT
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Gotcha! I have a parametric EQ and 1/3 octave EQ on the rig, so I could use one or the other to give me the curve. I have both radial horns and CD horns, so I can't just build the compensation in. The DBX 234 crossover does not have the circuit available. I suppose I could build a little outboard box I could patch in to the HF output, but that seems a bit of work. Maybe i'll live with the graphic EQ solution, and save up for a better xover.Thanks for the thorough response- I'll be saving that one.I'll send pictures when I get the traps built.Larry Acklin(putting up the big rig this weekend...)