Subject: 8pi tube electronic xover
Posted by Manualblock on Sat, 01 May 2004 13:52:22 GMT
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Hi Wayne and all; Can I ask about electronic xovers and their application to PI's? The 8pi is too interesting to pass up so here's my issue. I thought about using the parts from the Pi Theater 4's but every time I slide downstairs to escape the racket up here I turn them on and time just seems to fly, so after thinking it over and looking at them I said, naaah, I'm not cannibalising them. So I must start over and I thought maybe acquiring the parts and bi-amping the 8's with my little tube xover board and two amps. My question is this. If you cross the 8's at say 1600 cps, how do you integrate any xover compensation or eq. into the tube xover? Or is it even needed? Thanks, J.R.

Subject: Re: 8pi tube electronic xover
Posted by Wayne Parham on Sun, 02 May 2004 07:57:10 GMT
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I think it's an excellent idea. An active crossover is certainly an option. The tweeter should be third order and the midwoofer really doesn't use a crossover at all. Run the full range signal to the midwoofer and leave the 1mH coil in series with the amplifier output to the Alpha 10. That just shaves a little bit of the peaking at 2kHz.This pseudo-1st/3rd order crossover configuration is similar to using adjacent second-order crossovers so reverse tweeter connection polarity. I'd reverse the tweeter instead of the midwoofer because as frequency goes higher, absolute polarity shifts have less meaning in 3D space.As an aside, a movement of 3/4" is equivalent to a 180o shift at 10kHz, so you can see what happens in the room. Movement of another 3/4" shifts phase another 180o, and another 3/4" does it again, and so on. Phase interference patterns between separate sound sources are densely spaced at high frequencies, which tend to balance the sound field. But in the overlap region between the midwoofer and tweeter, this configuration brings the two subsystems in close phase so that they sum well.If you do not use the passive compensation components, then you will need to provide EQ at the preamp level. You'll need both top-octave and bottom octave compensation, and actually, this compensation spans a couple octaves at both ends. You'll want 10dB increase from 100Hz down and you'll also want 6dB/octave rise above 4kHz. These might be issues you'll address at the preamp level instead of padding either the tweeter or the midwoofer.