Subject: Re: Spice rules ;-)
Posted by Wayne Parham on Thu, 28 Feb 2008 00:49:52 GMT
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The difference is subtle. I did WTPro/ST models of various configurations and tested them. After I narrowed down to a few, I built actual physical models. As I said, the differences were subtle but

I'll revisit other models as I have time and since all models with compression drivers have the same tweeter circuit, I expect that part will carry over.

Frankly, I've walked this road before (or one very much like it) when I made the versions of the crossovers I've been using the past few years. I made first, second and third-order crossovers, with various amounts of attenuation and HF compensation for the tweeter. First was a Spice model, then an actual physical model.

This time around, I did the same thing but I also added fourth-order networks. I had a little better visibility both because of the use of ZMA files and also because my acoustic measuring equipment is better. That's how I found a few small tweaks in the tweeter circuit that made a slightly better response curve. Decrease the value for C2 down to 6.8uF and increase L1 to 1.0mH. I also tried different slopes for each driver. I liked the 2nd/3rd arrangement and the pseudo-first-order circuit, but I liked the 3rd/3rd better. Going to 4th/3rd was too much. I also found that the Zobels didn't need to be as large as I was using. Although the difference is marginal, large capacitors are expensive (especially when using premium brands) so the smaller, the better. In the end, after lots of tests and listening sessions, the crossover I liked best is this: