Subject: Crossover document - Rough draft
Posted by Wayne Parham on Mon, 17 Sep 2001 02:00:12 GMT
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I've uploaded an initial copy of my demonstrative crossover study document. Currently, it shows only first order designs, and it's a rough draft that hasn't been proofread or double-checked. But I can see that I won't be done with this thing for several days, so I've decided to put the first thirty-something pages online and let it be a work in progress. As I add major sections, I'll upload them so check this link periodically.Compensation networks, RC dampers (Zobels) and resonating (notch filter) dampers are discussed in this document. The pseudo-first-order filter is discussed, and there's enough information that you can clearly see its purpose and how it works. It's an often overlooked matter, worth mentioning that a coil in series with a (voice) coil is a voltage divider, not a filter. The part that makes it a filter is the complex reactance of the loudspeaker, but this also makes the voltage division more complex than a simple first-order filter, hence the name "pseudo-first-order".Higher order networks like those used in Pi Speakers with compression drivers will be discussed later, and the models for them are already included in the Spice models distribution on the Pi Speakers website. Be sure to grab a copy, so you can see the circuit analysis for yourselves. With this copy of Spice, you can also run the analysis shown in the document, and try some of your own designs.