Subject: Stupidity Exposed! Ignorance Revealed!
Posted by wunhuanglo on Sat, 05 Jun 2004 15:50:00 GMT
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OK, so I'm an idiot, but I can't find a fully satisfactory answer on my own so I'm asking for a little info.The Klipsch crossovers used on the "real" line of speakers (Type A, Tpye AA) have what look to be bell transformers in them. Are these really transformers for impedence matching (or some other purpose I can't imagine) or are they just inductors built into frames for mounting purposes?Thanks for any help.

Subject: Re: Stupidity Exposed! Ignorance Revealed!
Posted by Wayne Parham on Sat, 05 Jun 2004 18:37:05 GMT
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Klipsch uses autotransformers in their crossovers. Autoformers do provide step-up/step-down/impedance matching just like regular transformers but without the DC isolation provided by a transformer. Klipsch uses the autotransformers for level matching, like an L-Pad.

Subject: Re: Autotransformers - Thanks Wayne! <nt>
Posted by wunhuanglo on Sun, 06 Jun 2004 02:38:03 GMT
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Subject: A follow-up question?
Posted by wunhuanglo on Sun, 06 Jun 2004 13:45:39 GMT
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Thanks Wayne, that made it somewhat clearer. But what I'm still uncertain about is where the inductors are?All I've ever seen about DIY crossovers is that they're LCR networks, and what I'm used to seeing is an obvious air core inductor. But in the Klipsch design they must be using the self-inductance of the transformer somehow?That seems pretty difficult, because it seems to me that the inductance in the secondary is going to vary by what tap you use, and the essentially paralled inductors of the primary and secondary are going to have variable interactions depending on the size of the secondary selected?I found some indication in the patent referenced in the URL that the inductance of the transformer is used as part of the low-pass filter. But I get the impression from the patent that the ratios in that transformer are fixed, not user selectable as in

the Klipsch. Does Klipsch simply accept the variations as a compromise to achieve lower losses than they'd have from using resistors to pad the input?Maybe this is all to complicated for somebody who never got past Ohm's Law!
http://www.audioannals.com/04481663-Spranger-txt.htm

Subject: Re: A follow-up question?
Posted by Wayne Parham on Sun, 06 Jun 2004 19:51:42 GMT
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Transformers and autotransformers are coils and so have inductance. That can be used to form a low-pass or band-pass filter. What I'd suggest is to model the schematic(s) in Spice to see the signal output for each driver. Might be an interesting exercise.
