Subject: Re: Kind of crazy idea for a flanking sub processor
Posted by dheflin44 on Fri, 08 Mar 2013 05:34:14 GMT
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andy_c wrote on Wed, 06 March 2013 16:31

The only reservation I would have with that particular approach is due to the typical crossover implementation in AVRs. The low-pass is typically a fourth-order Linkwitz-Riley filter, but the high-pass is usually a second-order Butterworth (half of a fourth-order Linkwitz-Riley). The original idea behind this was that the mains were assumed to be a closed box with QTC=0.707 (Butterworth), and the crossover frequency would be chosen to be the fc of the mains, such that the second-order high-pass characteristic of the electrical filter, plus the electroacoustic second-order high-pass characteristic of the mains would combine for a net fourth-order electroacoustic high-pass. But when the low-pass and high-pass signals are combined purely electronically, that assumption is violated. I'm not sure what kind of ripple that would cause in the summed output, but I'll put it into a simulator to check it out.

Hi Andy,

Maybe a partial solution for the asymmetric XO would be to add a FMOD high-pass filter to the mains line input to the summer. This should get the slopes fairly close, but I'm not sure about the problems the Butterworth vs LR filter types might cause.

Thanks,
Darrell