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Subject: Re: Biamping-xovers-12, 18, or 24db/oct?  
Posted by [Paul C.](#) on Fri, 22 Jun 2001 11:49:41 GMT

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Wayne: Thanks for a excellent answer to my query. I can see there is more to it than a simple answer like 24db/oct is better than 12db/oct. While I understand phase causing a notch at the crossover point, I have another observation.... while in college, as a music major, I spent a lot of time in a sound lab playing with an Arp synthesizer, o-scope, etc... learning what was what in terms of what we hear. (The Arp was an early, crude synth, could make only one note at a time, but you could put together a tone from sine, square, sawtooth waves, add filtering, etc) As far as phase of overtones in relation to fundamental, which is what we are doing when the signal passes through the crossover from woofer to mid or tweeter, this can all be demonstrated on a synthesizer. You can compare two sawtooth waves, for example, one with the peak on the left (HF leading) and another with the peak on the right (HF lagging)... the sound of both is identical. Now, you can hear it while you are playing with phase, and moving from one to the other, but once the the phase of the higher partials is stable, and the slope completely reversed, the tone quality is the same either way. Just an observation from actual experience, you guys. Oh, I found some other interesting things, in how we identify and differentiate musical instruments by ear, but that is another chapter...Paul