Subject: Re: Crossover Document
Posted by Adrian Mack on Mon, 12 Jan 2004 05:59:20 GMT
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Hey WayneI had a feeling the lower and upper bounds were the points where both drivers are still generating output audibly, but at an attenuated level, sort of before it starts going "offline". Or something like that, I was just wondering if you had a way to calculate these limits or weather you just choose a point, like at -6db attenuation, -12db, etc. Since the crossover is a reactive component, then phase shift from this would be considered. On the 3rd order network, you've just told me that its 135deg at the crossover frequency (which would be the border before it starts becoming destructive). For this example I'll have 1.6KHz as the crossover frequency. If we shift the tweeter forward 1.05", which is 45deg or 1/8wl of 1.6KHz, then add that 45deg to the 135deg of phase shift produced by a 3rd order crossover at the xover point, would make the sound sources 180deg apart and complete cancellation would occur at the crossover frequency, is this correct? Can we consider the acoustic center's as well. Put the listener on axis in front of the speaker, but have the acoustic center of the tweeter 1.05" in front of the woofer's acoustic center. Assume same conditions as above example - 1.6KHz xover point and 3rd order xover on both woofer and tweeter. Even on-axis then you would have a huge cancellation at the crossover frequency if we shift the acoustic center of the tweeter 1.05" forward. ..... But isn't the onaxis and nullaxis positions shifted if the acoustic centers arn't aligned? Or is it only the nullaxis that is shifted? That cancellation onaxis I described above would still occur though and on axis, even if the axis is shifted? Thanks!Adrian