Subject: I hate educating you Rick. I really do.
Posted by Danny Richie on Sat, 26 Apr 2008 23:15:24 GMT
View Forum Message <> Reply to Message

But even more so I hate seeing misleading information being spread to those that really would like to learn something here. I guess you can be an indirect beneficiary.If a true ribbon tweeter like the Fountek's are used then you are limited to a crossover point no lower than about 2kHz. Even that is really pushing it. Anything below that really lets the ribbon get out of control and distortion will shoot up pretty dramatically. With that as a fixed variable the wavelength at the crossover point will be 6" or less. With wavelengths that short they will began to cancel each other out from about 20 degrees or so off axis. This also depends on how well they are in phase at the crossover point to begin with. One direction could be worse than the other. One way or another though they will begin to cause a dip in the response in the off axis. Whether the crossover is passive or electrical makes no difference. What can help some is a steeper slope (higher order crossover). A steeper crossover will allow the cancellation to be more confined to a more narrow region centered at the crossover point. A lower order crossover that allows the woofer to play up higher in range will allow cancellation to take place more so in the ranges above the crossover as well, and have a wider band of cancellation. Adjusting the toe in or toe out can keep the listener more in line with a sweet spot to minimize these effects, but unfortunately the off axis responses also contribute to the total in room response. If there is a dipped area in the off axis then there can also be a dipped out area in the side wall reflections. Obviously I am the one you are referring to when you state: "Some have stated that a lower crossover point will eliminate the lobe". However, that is quite true. Line sources like the LS-6 and LS-9 do use a low crossover point and off axis measurements to 40 degrees in either direction show little to no loss at all in output from driver cancellation. Specifically the LS-9, with its crossover at 850Hz, has great off axis responses. The 850Hz range has a wavelength that is 16" long. So while a 2 or 3 inch delay from driver offset does have an effect with wavelengths that are less than 6", it has no effect at all on the lower wavelengths as the degree of phase rotation is considerably less. This lower crossover point maintains constant and even off axis responses that contribute to an overall much smoother in room response, and better imaging as well.