Subject: Re: Advice please
Posted by Jim Griffin on Wed, 04 Jan 2006 15:00:37 GMT
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David,If I were you, I would focus on designing and listening to the left and right speakers before even thinking about a center fill or trinaural. This is especially true for a small room as you have. If you have decent near field arrays, the stereo image will be very broad and diffuse enough that you can likely get by without the center channel fill. Just as you have less sound fall-off per distance for near field sources, the image will have less sound fall off side to side (3 dB per doubling of the distance for near field arrays vs. 6 dB per doubling of distance for point sources). Bottom line in a small room there will be more than an adequate sweet spot for the image--I call it the sweet area. For your case you will need more than just 4 of the 6.5" drivers per side to achieve a near field array. Likely, you will need to have a line length of woofers equal to 6 or even more drivers. I would aim for a woofer line length equal to or greater than the 60" of the two ribbons per side. With the low crossover that you envision you don't have to have the woofers vertically spaced flange to flange so you have a little material between the drivers for internal bracing and such. Frankly, I would use 8 woofers per side (4 per ribbon) and go from there. As you originally suggested for your center channel design, you could design the left and right speaker to have two symmetrical vertically arrayed woofer lines spaced on either side of the ribbons. To prevent nulls in the horizontal dispersion for this design, you need to keep the horizontal center to center spacing between the woofers as close as you can (much less than a wavelength at the crossover frequency). For example, less assume that you have 6.5" diameter drivers with the same size frames tucked up against the 5.5" wide ribbons. Thus the horizontal c-t-c spacing between the woofer lines would (2 x 6.5)/2 + 5.5 = 12". That is a wavelength at 1130 Hz. Now I realize that you'll need some clearance space between the woofers and the ribbon, but this c-t-c distance should be less than the 24" c-t-c spacing that you suggested.Let us hear what you choose to build.Jim
Near Field Line Array White Paper