Subject: Re: Line Array discussion
Posted by DanWiggins on Wed, 08 Sep 2004 13:48:06 GMT
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Yes, it will have reduced vertical dispersion, and it may put the listener in the near-field. HOWEVER, the near-field can be approximated by d^2/l, where d is the diameter (or effective radiating length in the direction under consideration), and l is the wavelength.Given a 5" long ribbon; approximate d is 12cm or so (length of the ribbon). At 3000 Hz, the wavelength is approximately 4.5 cm, so the near-field is (12^2/4.5) 32 cm away. To reach the typical 2-3m listening distance (assume 2.5m), we'd need to reproduce frequencies with a wavelength of (12^2/250) 0.58 cm, or (13560/0.57) 23.8 kHz.It's the d^2 thing that really kills you as far as near-to-far-field transition is concerned. The larger the effective radiating diameter/length, the further the near-field. A single 5-6" long ribbon isn't really a concern in terms of near/far-field response differences until you're closer than ~2.1 meters (7 feet or so). Doubling up on the ribbons doubles the effective radiating length, which quadruples the near/far field transition.Dan Wiggins