Subject: Re: I wonder what's going on electrically?
Posted by Wayne Parham on Tue, 07 Mar 2006 16:06:45 GMT
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Whenever I consider the interaction of a super-tweeter with the rest of the system, I always expect it to have dense interference with the adjacent tweeter just below it in frequency. It smooths the response through averaging, because the two tweeters cannot really be coherent. The tweeters form a two-element array that is several wavelengths apart so interaction is complex. It tends to smooth the field. Look at the energy distribution graphs in the pages on this link, and find those described as having dense interference. The document linked is actually about horizontal arrays, but your super-tweeter forms a vertical array with the tweeter just below it, so the concepts are the same, just on a different axis."Dense interference" is when lobing becomes so severe that response actually becomes smoother. It's massive comb filtering, but on a scale that averages the sound field rather than pitting it. Comb filtering generally produces deep nulls in response, but it is most noticeable when the out-of-phase region is fairly large, so there is a wide spot in the room where some band of frequencies is missing. If the interaction is so dense that nulls and peaks form every fraction of an inch (as is possible at high frequencies) then the sound field tends to average out.