Subject: New Pipedreams and woofer/driver horiz spacing...
Posted by darkmoebius2 on Wed, 19 Aug 2009 00:09:05 GMT
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As I understand it, from Dr Griffin's white paper(pg 16) the woofer and tweeter line C-to-C needs to be "less than a one wavelength at the crossover frequency." Quote:While the vertical separation of the drivers in each line of the line array plays a significant factor in the performance of an array, the horizontal spacing between the two lines needs to be minimized to reduce image shift as the sound transitions between the woofers and the tweeters. The design is essentially the same as if you designed a two drivers (woofer/tweeter) speaker that is placed horizontally. Care must be paid to minimize horizontal lobing from the side-by-side drivers. Some things to consider are the basic horizontal dispersion of the individual drivers that would ideally be similar and overlap to at least 30 degrees off axis. The two lines need to be located so that their horizontal center-to-center distance is less than a one wavelength at the crossover frequency. Finally, a higher order acoustic crossover may be necessary to minimize any driver interaction above and below the crossover point.
Yet, these latest pictures of the new(er) generation Pipedreams shows separate mid/HF towers seemingly much further apart than that. Any ideas how they get around the resulting issues? (I notice they now offset the tweeters in the horizontal plane for time alignment)

I'd also like to get people's input on how Selah Audio's Symmetrica array with two mid/woofer lines sandwiching the ribbon line avoids the standard line C-to-C spacing rule. Does it not apply in the horizontal plane for lines of the same freq repsonse?