Subject: Re: 1/2 PI Crossover
Posted by Wayne Parham on Fri, 02 Sep 2011 19:33:27 GMT
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Since it's first-order, there's really no clear-cut crossover "point", more like a blended overlap region between 1kHz and 4kHz. This helps make the directivity smoother.

The general trend of a cone/dome speaker is that of pattern narrowing from bass to midrange, and then widening back up as the tweeter takes over only to begin narrowing again. This is mitigated by blending the drivers - With a wide overlap region, the directivity tends to remain more constant.

The driver with the widest pattern tends to set the directivity, provided they are properly phased (as is the case here). So what you have is a pattern that's omnidirectional down low, narrowing to the (180°) baffle angle in the midrange, where it remains constant until the tweeter's pattern narrows in the top-octave.