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Subject: Re: Positioning and subs

Posted by [Wayne Parham](#) on Thu, 15 Jan 2009 19:12:41 GMT

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What they are designed to do is to crossover from a direct radiating midwoofer to a horn tweeter where directivity matches. This provides better spectral balance off-axis.

Matching directivity in the vertical and the horizontal planes I like to use a 90°x40° radial horn with constant directivity in the horizontal plane. This provides good room coverage across a wide horizontal arc. It also limits output at large vertical angles, which do nothing but increase unwanted ceiling slap.

Another type of loudspeaker I make takes this one step further, but requires corner placement:

the pattern to 90° even at low frequencies, where radiation would normally be omnidirectional or at least very wide. This arrangement forces radiation to be limited to 90° all the way down to the Schroeder frequency, making the most constant directivity possible. A midrange horn is also used which has 90°x40° coverage and is implemented with a crossover strategy similar to the DI-matched two-ways, providing uniform 90° horizontal coverage and keeping a pure wide forward lobe of 40° with vertical nulls set outside that.