
Subject: Re: Surround voicing and matching the mains
Posted by [Wayne Parham](#) on Sun, 03 Feb 2013 18:48:13 GMT
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they don't use a compression driver and waveguide/horn. The Alpha and Delta drivers aren't very expensive, either way. But compression drivers and waveguides more than double the cost.

That's a non-issue for surrounds though, because like I said, you don't want directional surrounds. The very nature of the surround content is to provide ambience. So you really want a "180° waveguide", which is what a baffle is.

And while the directivity isn't as controlled as our larger speakers, it is more uniform than you might think, especially in the horizontal. The midwoofer is basically omnidirectional through its passband, and of course, the baffle causes it to be 180° forward-facing from the lower midrange up. Likewise, the tweeter is small enough to be omnidirectional all the way up to the top octave, so again, the baffle causes 180° radiation.

The midwoofer blends with the tweeter in the 2kHz region, and the low-order crossover causes them to blend through a wide overlap region. This prevents the midwoofer collapsing DI from defining the overall loudspeaker beamwidth, since the tweeter radiation is wide through the overlap region. Basically what you have is 180° coverage from the lower midrange all the way up to through to the top octave, where it narrows to about 90° by 15kHz.