Subject: Surround voicing and matching the mains
Posted by petew on Sat, 02 Feb 2013 16:23:01 GMT
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I've been trying to make a decision on which surround speakers to build. I plan to build a set of 6pi corner horns and a 3pi center at some point, but I need surrounds now.

I'm leaning towards one of the Fusion 10 models that use an Eminence Delta 10A and SEOS waveguide. Might be overkill for surrounds, but I like the idea of having the same bass driver all around. I figured the voicing would be more similar using the exact same drivers for mid/bass in mains and surrounds and similar drivers and horns for the highs.

What I don't know is how much different the Delta 10A will sound baffle mounted in the surrounds vs. horn loaded in the pi's. Any opinion would be much appreciated.

I use my HT probably 60% music (with Dolby prologic 2) 40% movies.

Subject: Re: Surround voicing and matching the mains
Posted by steve f on Sat, 02 Feb 2013 19:50:26 GMT
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I would go one or two PI depending on available space. Generally speaking, you can't match directivity very well with horn mid/tweet drivers and a 10" woofer. Besides, the Delta probably won't play as low frequency in smaller boxes as the Alpha series will. The sound quality should be similar because you are using Eminence woofers on all of the speakers.

Subject: Re: Surround voicing and matching the mains
Posted by Wayne Parham on Sun, 03 Feb 2013 00:10:38 GMT
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I agree with Steve on all points. The Delta 10 is a great midrange but doesn't dig deep enough for use as a midwoofer. Even when running subs, you still want mains that will at least provide some bass, and the Delta's just can't do it. They're midrange speakers, not midwoofers.

Beyond that, I personally prefer speakers with wide dispersion for surrounds, so 90° waveguides are out. Love 'em for mains, obviously, but for surrounds, I want a much wider pattern.

match with our larger waveguide speakers. Each of our loudspeakers provides basically flat power response, which means the sound radiated in all directions is flat, not just the sound radiated straight ahead, on-axis. The difference is our waveguide speakers radiate a 90° pattern

surrounds.
1pi or 2pi for surroundsIn fact, I point my surrounds at the wall and them diffuse energy all over

the place. It's exactly the opposite approach I use for the mains, but it makes just the right ambience for surrounds, in my opinion. Make the sidewall angle of reflection direct the sound towards the listening area, and it makes very natural sounding surround ambience.

Subject: Re: Surround voicing and matching the mains
Posted by petew on Sun, 03 Feb 2013 17:48:29 GMT
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The 2pi's are less than half the cost of the others I'm considering. Thanks for the advice.

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 it's 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.
