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Subject: Re: Flanking Subs vs Helper Woofers

Posted by [Wayne Parham](#) on Thu, 29 Nov 2012 21:32:16 GMT

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I think that's a fine approach. What you are suggesting essentially is to use high-efficiency woofers both for midwoofers and for helper woofers. Blend them together in the modal region, but low-pass the helper woofer to prevent it from developing any output above the Schroeder frequency. Roll off the helper woofer gracefully in the transition region.

blends with the bass bin between 100Hz and 250Hz.

it with a speaker level passive crossover, just a coil or maybe a coil/cap and Zobel. This solves the problem of matching sensitivities of the two subsystems, and therefore removes the requirement of separate amps. What you would have is a 2.5-way loudspeaker with a detached helper woofer, placed in a flanking sub configuration.

The trade-off, of course, is that you either have to sacrifice bass extension or you have to make the helper woofer box really big. But for the midbass blending - what the flanking sub approach is designed to address - you don't really need the extension anyway. So you could run the same size box, and use the more distant subs for LF extension.

However, this yields another consideration, and that is when flanking subs are run deep, they provide modal smoothing down low as well as up high. They provide additional bass sound sources used in conjunction with other more distant subs. We want distribution of sound sources in the deep bass range, and the flanking subs can provide that if they're generating deep bass output. If not, you're back down to a small number of sound sources in the deepest bass range.

As with all things, it comes down to a matter of competing priorities and trade-offs. I think if I didn't notice problems in the deep bass, I'd probably be happy with high-efficiency helper woofers and one really deep sub. Likewise, I am also happy in many rooms with just a pair of deep-reaching flanking subs, for much the same reason. Some rooms have better modal behavior than others, and particularly homes with framed drywall construction have some damping that smoothes the lowest modes a little bit. Other rooms, like those with brick, stucco or concrete walls, really benefit from a full compliment of four subs, two (deep running) flanking subs and two distant subs.