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Subject: Re: stereo subs vs all around the room subs

Posted by [Wayne Parham](#) on Thu, 06 Mar 2008 04:37:03 GMT

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I agree with you about stereo subs. One of my favorite implementations is a three-way speaker, with horn-loaded tweeter and midrange that goes down to nearly 100Hz. The woofers are only used up to ~200Hz, and are acoustically close to the midhorns. Extra subs can be added if desired, placed fairly close to the mains but spaced enough to average room modes. These extra subs are crossed-over very low, with low-pass cutoff well below 100Hz. This prevents abnormal

is omnidirectional unless the sound source is very large. But most subs touch the midrange, which really starts around 80Hz. You can localize sounds from about there upward in frequency. That's one reason why you can sometimes tell that bass is coming from a sub if it's far away from the mains. There is a completely different issue that is sometimes a problem, and that's room modes. Sometimes they're not bad, thanks to framed drywall construction which tends to damp room resonances somewhat. The walls have some give, and that helps a great deal. But room modes can make certain bass notes drop out in specific places in the room. The cause is interference between a reflected wave and the source, or between two reflected waves. It makes pockets of high and low energy throughout the room at frequencies below about 300Hz. When you use multiple strategically-placed subs, you can fill in the holes. A notch formed by interference between one sub and a boundary's reflection is energized by a different sub that doesn't have destructive interference at that particular location.

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