Subject: Re: Small speaker flanking sub limitations.
Posted by Wayne Parham on Thu, 27 Oct 2016 13:42:04 GMT
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When mains are very small like that, you really need to use subs just to prevent over-excursion of the mains. If you want to use a flanking sub approach in that case, you really need two subs per side.

The whole idea is to increase the number of sound sources in the modal region. This smooths room modes and self-interference notches. At low frequencies, smoothing is accomplished by placing subs around the room, distant from one another. At higher frequencies, where localization can occur, you want the sound sources closer together, but still not coherently grouped (like you would want in an anechoic environment).

The idea behind flanking sub placement is basically the same as an array. It reduces self-interference notches from nearest boundaries. At whatever frequency one sound source suffers a notch, the other won't and vice-versa. Since you tend to see these anomalies in the 100-200 Hertz region, blending of sound sources by a truncated array makes sense.

That's why we run helper woofers (flanking subs) up into that 100-200Hz range. They smooth self-interference and high frequency room modes, up to around 200Hz where the sound field becomes statistical rather than modal.