

---

Subject: Re: Flanking Subs vs Helper Woofers

Posted by [Wayne Parham](#) on Thu, 29 Nov 2012 18:58:02 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

Flanking subs do not get a summed signal - They get the same signal as the main speaker they are flanking, with a low-pass filter applied. They're stereo subs. That's one of the key distinctions between flanking subs and more distant distributed subs in a multisub configuration. Flanking subs are closer than distributed subs, and they are sent a low-passed copy of the same signal as the mains they're flanking.

You could use a speaker level passive filter, but the problem is most subs are 10dB less efficient than the mains, at least the ones we're talking about here. So that makes a separate amplifier the most attractive option, mostly for matching SPL.

In my terminology, helper woofers and flanking subs are the same thing. Both are woofers that augment another woofer in an overlapping band. The low-passed woofer in a 2.5-way is a helper woofer, but its disadvantage is that it cannot be positioned independently of the main woofer. That's a pretty significant disadvantage, in my opinion, because it limits placement options and prevents the owner from setting them up in a way that mitigates self-interference from nearest boundaries. That's the whole idea of the flanking sub approach - To use a physically separate helper woofer positioned between the mains and the nearest boundaries to smooth self-interference notches and higher frequency room modes.

A multisub configuration should include flanking subs and distributed subs. A typical arrangement has two flanking subs and two distributed subs. Flanking subs smooth the upper modal region and self-interference notches in the 80-160Hz range. Again, flanking subs aren't summed - They are sent a low-passed version of the signal going to the main speaker they're flanking. Distributed subs smooth the lower-frequency range, below 80Hz. At those low frequencies, localization isn't as much an issue, so the signal to the distant distributed subs is summed. I actually think flanking subs are more important than the distributed subs, because response anomalies in the 80-160Hz octave are more noticeable than deeper bass modes. But the best response can only be achieved using both.

Helper Woofer Location

---