Subject: Subs as 3pi stands?
Posted by Speqtre on Thu, 01 Dec 2011 16:26:38 GMT
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Hi Wayne,

I read through as much as the forum as I could, but didn't see this asked.

I did see that you recommend the flanking sub approach, to the side of and a bit behind the mains.

I plan on putting LCR 3pi's behind an AT screen with two subs. Can I somehow use the subs as stands for the LR 3pi's? (probably with another, short stand to get the 3pi at the desired listening height, or possibly something attached to the top of the DIY sub)

Thanks,

Ken

Subject: Re: Subs as 3pi stands?
Posted by Wayne Parham on Thu, 01 Dec 2011 17:16:11 GMT
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You can use the subs as stands, which effectively makes them the same as a three-way loudspeaker. But I wouldn't do that, for precisely the point you alluded to: Flanking subs. For them to work best, they must be a few feet away, in between the mains and the nearest boundaries. The best place to put flanking subs is beside, below and behind - offset in all three dimensions, between the mains and the wall behind them, between the mains and the floor, and between the mains and the nearest side wall.

If you put the mains directly on the subs, you're only offset in the vertical, but not in the fore-aft or the lateral horizontals. My suggestion is to put the mains on stands, and to put the subs in flanking positions, below, behind and beside the mains.
Room modes, multisubs and flanking subs

Subject: Re: Subs as 3pi stands?
Posted by Speqtre on Thu, 01 Dec 2011 17:22:34 GMT
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Thanks Wayne, will do!

Subject: Re: Subs as 3pi stands?
Posted by themilford on Sat, 07 Jan 2012 17:44:59 GMT
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Interesting... I was gonna ask the same thing.

If placing them atop is your only option in terms of space are there any provisions or changes that should be made... like turning the subs so they fire sideways or back... or adjusting the speaker crossovers, etc?

-D

Subject: Re: Subs as 3pi stands?
Posted by Wayne Parham on Sat, 07 Jan 2012 20:13:48 GMT
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If putting the mains on top of the woofers is all you can do, then you can't take advantage of modal smoothing using multiple sound sources. The mains and the subs will sum the same (either in phase or out of phase, depending on how they're connected). But bear in mind, if you're outdoors or in a very large space, this is exactly what you want. It's only indoors where room modes are a problem that can be mitigated using a multisub approach.

I must say that it seems inconceivable to be that flanking subs couldn't be employed due to space limitations. They're not far away - Just maybe two or three feet outside and behind the mains. If you are setup indoors and have the mains less than about eight feet from the wall behind them, then I'd definitely flank 'em with subs. Just put he subs a little bit behind the mains instead of directly underneath them.

Subject: Re: Subs as 3pi stands?
Posted by themilford on Sat, 07 Jan 2012 20:20:27 GMT
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Imagine having a recording studio where the floor space is a premium... and we want to "stack" these into the corners. The room is already cluttered but we're fixing that... so having the subs under the mains in the corners would be out of the way enough to justify having them.

We need the lower octave because we run a few vintage analog synthesizers that need to "push" in the mix.

it's possible the subs may have a spot along the same back wall not directly under the mains... but the mains are going up in the corners against the sides and back wall... at head level... so the

subs can't go back any further.

Room is big, 25x22x13 or so.

Subject: Consider constant directivity cornerhorns
Posted by Wayne Parham on Sat, 07 Jan 2012 20:42:10 GMT
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constant directivity cornerhorn is designed to be placed there, and maximizes the benefit of that configuration:

but if you have the right corners, you'll be much better off with constant directivity cornerhorns because they are designed to be placed there, being acoustcially close to the apex.

Having the mains backed into the corner will prevent reflections off the back wall or adjacent side wall at low frequencies, leaving only the standing wave modes to deal with. But a traditional cabinet cannot be backed close enough into the corner to prevent reflections off the rear and adjacent side wall at low-midrange frequencies. That's why the constant directivity cornerhorn has the advantage. It is able to truly provide constant directivity from the Schroeder frequency upwards.

But you will still have issues below the Schroeder frequency. That's where multisubs can help. Constant directivity cornerhorns don't need flanking subs, because they are already sort of built-in. But you would benefit from subs placed further away. You don't want them near the mains, because they won't provide modal smoothing. Can you perhaps place the subs in opposite corners? Maybe even in the walls?
High-Fidelity Uniform-Directivity Loudspeakers

Subject: Re: Consider constant directivity cornerhorns
Posted by themilford on Sat, 07 Jan 2012 22:45:00 GMT
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The Cornerhorns seem like such a cool idea... however when we tour I plan to grab one of the Three Pis and use it as a keyboard monitor cabinet... Also when we play smaller venues we will sometimes need to bring our PA... The mounting as such in the studio is out of necessity. I am building the shelves for them to sit on... which are in the corners which have sort of a bass trap in them at sort of a 45 degree angle... so the flat back of the speaker will largely be up against that.

I will be building the cabs to be road-worth with handles and such... much like the TL606 and TL806 designs I build for bass and guitar:

Subject: Re: Back to three Pi mains and flanking subs
Posted by Wayne Parham on Sun, 08 Jan 2012 02:00:07 GMT
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Well, there you go. I understand completely. That's the only problem with the cornerhorns, they're only for people that have the right corners and will leave them there. That's what we make the matched-directivity two-ways and flanking subs. They're the next best thing, a close second, and they can be placed pretty much anywhere. But do think about your subwoofer installation and try to find a solution that satisfies both your placement concerns and the modal situation.