
Subject: Information about the 3 Pi Subwoofer
Posted by [j0nnyfive](#) on Fri, 01 Feb 2013 18:43:40 GMT
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Hey Wayne!

Would you talk a little bit about your 3 Pi sub? For example...

What was your selection criteria for that particular woofer?

Why ported instead of sealed, bandpass, etc?

Why that size of enclosure?

Why a 90db sensitivity vs a higher sensitivity like the 4 Pi?

What compromises were you balancing, and what did you decide?

What is it's intended use? Are they intended to be used more as flanking subs (higher frequencies), or are they meant to be a sort of "do everything general purpose" type of sub?

Would you be willing to create a new "Pi" model for higher output for home theater use (not the big horn bazooka you already have, but something in-between)? It looks to me like there is a growing market for "real" HT subs.

Is there another question I should be asking?

Just curious! I've been reading about subwoofers lately, and I'm curious about your thinking on the 3 pi. Since I'm wanting home theater, I want to get as practically close to reference level bass as possible (85db + 30db headroom @ the seats I think).

I don't HAVE to get that loud (as I don't intend on actually listening to bass that loud holy mercy that's insane). But, that's just a general direction I'm leaning towards. Anyway, thanks again!

Subject: Re: Information about the 3 Pi Subwoofer
Posted by [Wayne Parham](#) on Fri, 01 Feb 2013 19:21:03 GMT
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Those are good questions, thanks for asking.

It was designed to be a high-quality subwoofer in a convenient size. It isn't specifically designed to be a flanking sub, but its smooth response reaches high enough it is quite good as a flanking

sub. It's low-frequency extension is deep enough it works great as a distributed subwoofer too.

I have larger subwoofers available, but they aren't convenient for multisub placement. The three are intrusive, but large enough not to give up too much efficiency.

My larger subwoofers are all much more efficient, so if you need that, it's available. What I don't have in the line is a smaller subwoofer that's less efficient. A smaller box might be worthwhile for smaller rooms - those that need multisubs even more than larger rooms do. But a smaller box would need to be less efficient.

I chose a vented alignment because I think vented cabinets are the best direct radiating configuration. I really only design bass-reflex and horn systems.

Sealed systems are alright, but they don't load the woofer as well down low, so excursion and distortion are higher. Some say they prefer the reduced group delay from a sealed box but that's non-sequitur because room modes swamp loudspeaker phase. So I find no benefit in sealed cabinets, only disadvantages.

Bandpass boxes are probably OK but I never heard one that I didn't think sounded "tubby". They're not for me. If I want to build a bandpass system, I prefer to build a horn. That way I get a lot more than just a bandpass, I also get increased acoustic loading, reduced excursion, greater efficiency and all-around better sound. Of course, a horn is a larger box. But if I need a smaller box, I'll run a bass-reflex system.

Transmission lines and "tapped horns" aren't attractive to me because they suffer from standing waves in the passband, and those almost always cause junk at high frequency. What I mean by "junk" is big anomalies, like 10dB peaks and notches. Some people find this sound interesting, you'll hear people describe the "grunt" from a tapped horn, for example. But midbass/midrange "grunt" is not something I want from a subwoofer. Usually transmission lines are stuffed with insulation to damp these higher frequency standing wave modes, but it is an anomaly that I'd prefer to avoid rather than to mitigate.

subwoofer, but it is very large. Overkill, by a long shot, for home theater. You can get subs that go lower, but they are usually T-Lines or tapped horns with the grunt. Sometimes you'll see a

more reasonably sized, and provides plenty of power for home high-fidelity use.

Subject: Re: Information about the 3 Pi Subwoofer
Posted by [j0nnyfive](#) on Fri, 01 Feb 2013 20:21:06 GMT
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Awesome. Thanks for those answers! Every time you answer one of my questions, you give me new vocabulary to look up! This is good, I'm learning!

Subject: Re: Information about the 3 Pi Subwoofer
Posted by [skywave-rider](#) on Sat, 02 Feb 2013 06:43:22 GMT
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Wayne Parham wrote on Fri, 01 February 2013 13:21

...What I don't have in the line is a smaller subwoofer that's less efficient. A smaller box might be worthwhile for smaller rooms - those that need multisubs even more than larger rooms do. But a smaller box would need to be less efficient.

...

This is what I need for apt. use, Wayne. Plate amps and digital RF for the feed, and very small boxes.
