Subject: Standard 4Pi vs. Upgraded 4Pi
Posted by Maxjr on Tue, 09 Aug 2011 01:42:20 GMT
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From what I've read, I've been sold on the upgraded 4Pi speaker with JBL 2226H and B&C DE250 with 15 Gauge coils on the x/o. However, recently, I've been looking at the standard 4Pi and upgraded 4Pi and wondering how much of a difference there is between the two.

Since my budget is tight, and I won't be able to hear either one of these setups prior to building, I'm wondering how much of a noticeable difference I'll actually be able to hear. Is it worth the almost 100% cost increase for the upgraded version, or are we going into diminishing returns? (if money was no issue, I'd definitely just go for the best and never look back, but to be honest, I'd be stretching myself very thin if I purchased 2 of the upgraded kits.). I'm currently wondering how good the standard 4Pi's sound. To give you a little background, I currently have 3 Energy RC10 bookshelves for my LCR and 2 Energy RC-R for surrounds. I have 2 of lilmike's cinema F20 front loaded 15" horns for sub duty.

Wayne, are there frequency response graphs comparing the two? Also, I consider myself amateur at best. If I don't listen at loud levels, will I be able to tell the difference between the upgraded and standard 4Pi? Thanks for your quick responses and this great forum!

Cheers,
Joel

Subject: Re: Standard 4Pi vs. Upgraded 4Pi
Posted by steve f on Tue, 09 Aug 2011 03:45:20 GMT
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If you don't need the highest efficiency and want to save money, consider a standard 3PI. The stamped Delta woofer is relatively cheap and IMO sounds pretty good and can play very loud if necessary. You can sell it later when finances are better. You may not want to though. Even the economy versions of Wayne's designs are very nice speakers.

Steve

Subject: Re: Standard 4Pi vs. Upgraded 4Pi
Posted by Maxjr on Tue, 09 Aug 2011 07:35:06 GMT
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That is a really good idea , Steve. The standard 3Pi is a good budget speaker. However, I'm still curious on the standard vs. Upgraded 4Pi dilemma

Subject: Re: Standard 4Pi vs. Upgraded 4Pi
Posted by TheDude on Tue, 09 Aug 2011 10:50:32 GMT
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I've owned the 4Pi speakers with the DE250 and JBL 2226H upgrades for two and a half years now. They are some of the best speakers I've heard. In short, I think you should go with the upgraded model. I went with it because I didn't want to be wondering about how much better it would sound while listening to the standard model and then decide to upgrade and end up with an extra pair of woofers and tweeters plus the cost of the upgrade. I have not regretted it. Not ever. Don't worry about the crossover upgrades. You more then likely won't hear the difference. Its wasted money that you can put towards buying another subwoofer which is the next upgrade you should be considering.
I know it increases the costs significantly. Do what I did. Keep saving your money and buy them when you have enough. Then do the same for another sub so you can take full advantage of the multi sub setup. If another F20 is too big get something smaller. this approach will cost less in the long run, and you have a better system with high quality parts.
- M

Subject: Re: Standard 4Pi vs. Upgraded 4Pi
Posted by Maxjr on Tue, 09 Aug 2011 10:58:25 GMT
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Thanks, The Dude. You are probably right. But, I'm impatient . I have the itch and time to build something now that I may not have in the near future. I may not have the time to spend on this great hobby when the money permits. Oh the dilemmas.

Subject: Re: Standard 4Pi vs. Upgraded 4Pi
Posted by Matts on Wed, 10 Aug 2011 15:23:28 GMT
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I built the 4 Pi's with the Eminence woofers and drivers, and enjoyed them immensely. I did upgrade some of the xover components- used some Auricaps and Mills resistors- and it made them a little cleaner. How much difference that makes will depend on your amps and sources. Few years later, I came across some 2226's at very good price, and "experimented" with the DE250 drivers...and was very pleasantly surprised by the improvements. Never had any complaints about the Eminence cd's, but the better ones are worth the extra money. There's also some resale value in the used Eminences, as they're solid and used in pro sound.

Bottom line, both models are well worth what they cost, but if you only have money for the Eminence, get 'em and don't drive yourself crazy about it. If your amps and sources are lower-priced as well, you may be fine. If you can't stand it, get a part-time job and save for the better ones! haha Either way, you get an excellent value for your money, especially if you build your own cabs.

The higher-end compression driver is smoother and the upgraded midwoofer is both smoother and lower distortion. This is largely because of the use of shorting rings in the magnet structure. Magnet structuresThe reduced distortion is measureable, but don't take this to mean there is a huge difference. It's a subtle diference, but it is audible.

One of the effects of distortion is listener fatigue. It becomes irritating, and even causes temporary tinnitus. It seems to be a function of SPL/time, in that high sound levels cause irritation fairly soon, but the same irritation can be felt at low sound levels if experienced over a longer period of time. These are my own personal observations but I have also heard comments from many other people that make me believe they experience the same things.

This is what I perceive where distortion is concerned:
1. In main speakers, lower distortion speakers tend to sound clearer to me, all other things being equal. However, the audibility is a function of SPL, and below a certain level, I cannot detect the distortion.
2. At high power level, a speaker with a little more distortion will be more fatiguing, making me want to "turn it down" much sooner than a less distorted speaker.
3. At low power levels, a speaker with a little more distortion will be more fatiguing over a long period of time. At low power levels, I cannot tell that it is going to fatigue me at first, even for a few hours, but after a few days at a trade show, for example, the higher distortion speaker will fatigue me, where the lower distortion speaker does not.
4. In subwoofers, distortion is much less noticeable, but higher distortion tends to sound louder and fatter. (Sorry for the subjective terms, just trying to describe what I hear)
5. Just like the mains, a high distortion woofer will be fatiguing, even if it cannot be easily detected.I gained these opinions after many years of using my own speakers which often come in a stock or upgraded version. The upgraded version usually has a midwoofer with a shorting ring, creating less distortion. Their response curves are very similar between the stock and upgraded versions, but the upgraded model has lower distortion.

As for crossover upgrades, my feeling is that the coil upgrade is worthwhile, followed by the resistor upgrade and finally the caps. Even if you don't call your parts, you're going to get good stuff. We only use Solen, Jantzen, Dayon or Erse polypropylene capacitors, Jantzen air-core coils and non-inductive resistors. Some models are offered with upgrade options where you can call parts, choosing Auricaps for example. Some are offered with larger guage coils as an upgrade option too.

If you upgrade to larger coils, you get a little tighter bass but slightly less depth. Think of the difference in bass sound between using SET and push-pull amps. Increasing DCR reduces damping factor, and that has an effect similar to increasing woofer Qes and ultimately Qts. So the stock 18 guage coil sounds a little fuller down low, whereas a larger guage coil sounds a little tighter.

I've substituted a lot of caps, and the differences are a little more subjective. It isn't a simple matter of DCR and damping factors, like the coil swap is. I've used everything from Solen,

Jantzen, Dayon and Erse (which all sound very nice to me) to oil filled motor runs to Auricaps and even Audio Notes.

Solens, Daytons and Erse poly caps all sound the same to me. They're great, maybe sound quality doesn't get any better than that. But of course when you spend fifty bucks on a cap, you're

and I think they sound more pure with Auricaps. Do they really? I don't know. But they do sound nice. They have the same character, at least to me, but maybe a little more silky sounding smoothness. Nah, probably just the added cost making me think so.

Audio Note caps disappoint me. I hate to say that 'cause I consider those folks over there to be friends. I love their amps. But they just don't have the capacitors down, in my opinion. After a while they leak, and a megabuck cap shouldn't do that. I prefer other high end caps.

There are other brands I've tried, Mundorfs, Kimbers, even non-polarized Black Gates just to see. I don't recommend non-polarized electrolytics, even Black Gates. Might be just because I still remember the unnatural plastic sound of older NP 'lytics, but I don't trust 'em, even from Rubycon. Kimbers are fine, seem to be a little bit more etched. More HF, too much maybe. Mundorfs are good.

Now then, understand this. Everything I've just told you about caps is very subjective. Measurements of systems with most of these components don't show anything to tell me one was better than the other, and the sound differences are all too slight (if even there) to qualify as demonstrative one way or the other. Could be all psychology. I am fairly certain I can't detect differences in a blind test, with reasonable exceptions. For example, I am sure I can hear a difference between a motor run capacitor, a poly cap and a cheap electrolytic. But I am reasonably sure I could not tell the difference between a Jantzen, Solen, Erse or Dayton poly cap in a blind test. I probably couldn't tell the difference between any of those and an Auricap blind either. I could tell the Audio Note cap though, because it would not make a sound but would leave its ooze all over the table.