Subject: Request for pi3 & pi4 plans and driver question
Posted by Speqtre on Tue, 30 Nov 2010 19:17:57 GMT
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Wayne,

I'd appreciate it greatly if you can send me the plans for the pi3 and pi4.

Also, what is it about the JBL 2226 that makes it so good? Is it only marginally better than its competitors, or head and shoulders above? What about a ' best bang for the buck' equivalent to it?

I'm very new to this, and there are so many specs to speakers that it makes ones head spin!

Thanks very much!

Subject: Re: Request for pi3 & pi4 plans and driver question
Posted by Wayne Parham on Tue, 30 Nov 2010 19:55:17 GMT
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Please decide which of these two loudspeakers you want to build. They're very similar in size and

As for the reasons to go with the upgraded parts (i.e. JBL or AE), it's largely because they have shorting rings. I think that's what makes the biggest improvement in sound quality over the stock Eminence parts. Shorting rings stabilize magnetic flux and reduce distortion. They also reduce voice coil inductance, making an easier load. The improved tweeters are better largely because the diaphragm is well damped, so the response is smoother. Not as much breakup in the top octave.

Subject: Re: Request for pi3 & pi4 plans and driver question
Posted by Speqtre on Wed, 01 Dec 2010 03:31:43 GMT
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Wayne,

Thanks for the phenomenally quick reply. As far as the upgrade choices go, is it an all or nothing thing? Should you only upgrade the tweeter if you're going with the upgraded mid-woofer? Should you always upgrade the crossovers if going with the premium drivers?

I believe I'd like to build the 4pi if you could send me those plans.

quick edit: What do you think of electronic crossovers?

Again, my thanks to you!

Subject: Re: Request for pi3 & pi4 plans and driver question
Posted by Wayne Parham on Wed, 01 Dec 2010 04:44:08 GMT
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Plans are on the way. As for upgrade options, see the post below:
UpgradesIn my opinion, the biggest improvement is heard when upgrading the midwoofer, second when upgrading the tweeter, and finally, the "Nth degree" subtle improvements come when upgrading the crossovers.

I like active crossovers, but the problem is if you don't configure them specifically for the loudspeaker, then they are compromised and the fully optimized passive solution will outperform them.

You can do it, some of the DIYers on my forum have done it and I even provided values for the Steve Bench 6DJ8 crossover that would get you in the ballpark. But the crossover does more than just split the frequencies to woofer and tweeter, it also sets system phase and this controls the position of the forward lobe and vertical nulls.

The passive crossover is designed precisely for the loudspeaker, taking into account its drivers and their positions. It takes an exact match to work right. You basically have to implement the same crossover actively that is done passively by the internal crossover, and most of the off-the-shelf active crossovers can't do it. So while in theory active crossovers can provide benefits, unless you go through a proper design/test development cycle, you will most likely lose more than you gain.

If you want to try your hand at it, the link below describes the way I suggest optimizing the crossover for the loudspeaker. You'll have a good starting point since the passive unit is known.
Crossover optimization for DI-matched two-way speakers

Subject: Re: Request for pi3 & pi4 plans and driver question
Posted by Speqtre on Wed, 01 Dec 2010 12:02:22 GMT
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Wayne, Thanks for the plans and the advice!
