Subject: Just finished 4pi build need some tips
Posted by Jelly_bean on Fri, 02 Aug 2019 04:03:02 GMT
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Hi everyone,

I just finished my 4pi build (B&C + JBL) and finally have them up and running.

The sound was very underwhelming at first! Something had to be wrong. I believe I had the B&C driver hooked up backwards at first. I switched the leads and it sounded much better. It was like there was a hole in the sound from where the woofer would transition to the horn.

Anyway, I've had a couple hours on them now and could use a few suggestions. I can't help but notice that they are pretty bass heavy to the point where the sound is quite muddy/nasally and the speakers almost sound slow and not very dynamic. Instruments don't have the realism that everyone raves about with these speakers. I tried to switch the polarity of the JBLs but that didn't change much of the sound or fix the boomy sound.

1. Will the sound change after a while? (Not sure if I believe the whole 100+ hours of break in theory.)

2. I have R13 insulation on the top, back, port side, and the bracing under the horn resting on the braces.
Should I also have one laying on the the very bottom of the cabinet? I've seen people do both.

3. I have the speakers braced as per the plans (front and back + side to side) Do I need more bracing? Speakers have a solid "thwack" sound when I tap them with a knuckle anywhere on the cabinet and they don't vibrate when I touch them as they are playing. Do I need to additional bracing?

4. What is the recommended placement into the room for these? Do they need to be against the wall or pulled into the room? I've read about crossing them in front of the listener to widen the sweet spot and have them set up that way.

Thank you all in advance for your suggestions and help. They sound promising and I think I'm getting closer to getting them "right".

Chris

Subject: Re: Just finished 4pi build need some tips
Posted by Wayne Parham on Fri, 02 Aug 2019 16:11:41 GMT
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From what you've described, your bracing is adequate and proper, and the damping material is installed properly. Just one question: Did you move the paper vapor barrier before installing the

damping material?

This wouldn't cause the speakers to sound bass-heavy or nasal though. That sounds like a crossover or midwoofer problem to me. Did we build the crossovers for you or did you build them? Have you connected the Zobel resistor?

Questions about the midwoofers: Did you get them from us or did you source them elsewhere? If you sourced them, were they new or used? Do we know the manufacturer and condition of the cones? I ask because a used 2226 can be made 100% good-as-new with genuine JBL recones, but some aftermarket generics aren't as good.

Let's examine these things first before moving onto the more subtle things like loudspeaker placement.

Subject: Re: Just finished 4pi build need some tips
Posted by Jelly_bean on Sun, 04 Aug 2019 03:59:55 GMT
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I purchased the crossovers from you guys so all is good there. I sourced the JBLs elsewhere. They are NOS with original cones and are in great shape. yep, the vapor barrier is removed just R13 insulation on both sides.

I might have the woofers connected backwards, would that make a significant difference (I'm new to all of this)? I'm out of town for the next few days (Central California is too dang hot right now) so I can't check them right away.

One thing I did do was get them off of the floor a bit. That seemed to help the boomy bass some, but it still is there and has a nasal sound to it.

Thank you for helping me out. I look forward to tweaking and playing with them!

Subject: Re: Just finished 4pi build need some tips
Posted by OutOfSpace on Sun, 04 Aug 2019 22:08:12 GMT
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Cheap trick you can try: Using a regular 1.5V battery (AA, AAA, C, D cells), touch the leads from the speaker to the battery. Minimally, you can confirm that the woofers are connected "correctly". What's most important is they are connected the same, meaning the cone pushes out or pulls in for the same input. When they aren't the same, you end up with holes in the response and an apparent lack of bass (canceling each other because of phase). That doesn't seem to be your problem. Then is the issue with the horn drivers. Again, "the same" phase is most important. Then you can try switching the leads and see if that resolves things. When the horns verses woofers are wrong, there's again either a hole or peak ~1.6KHz, which is the x-over frequency. I

spent ~$200 for an audio interface and a measurement mic and using Holm Impulse it's very obvious when the phases are wrong, plus you can measure the speaker response, of course, to see where things are off.

Chris

Subject: Re: Just finished 4pi build need some tips
Posted by Wayne Parham on Mon, 05 Aug 2019 14:12:36 GMT
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Be sure to verify that the Zobel resistor is installed properly. If it is missing, the speaker sounds somewhat nasal.

Is there any way to get acoustic measurements?

Subject: Re: Just finished 4pi build need some tips
Posted by Jelly_bean on Fri, 09 Aug 2019 05:32:04 GMT
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Do the leads on the Zobel resistor matter which tabs (+ or -) they connect to on the crossover? I'll be home in the next couple of days and will be trying the suggestions that have been mentioned. I'm positive it's something i have connected incorrectly.

Subject: Re: Just finished 4pi build need some tips
Posted by Wayne Parham on Fri, 09 Aug 2019 14:26:58 GMT
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The Zobel resistor connects on the crossover in position R3. There are two lugs nearest the corner, furthest away from the bank of R1/R2 resistors. Polarity isn't important. You can find the location of R3 on the board layout in the plans. I'll resend the plans if you've lost them.

Subject: Re: Just finished 4pi build need some tips
Posted by Jelly_bean on Sun, 13 Oct 2019 04:47:51 GMT
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Hi all,

Apologies for not posting my findings sooner I've just been busy listening to them! I traced the problem to having them wired up wrong, and had to get some of the stuffing better set in the cabinets. After getting that sorted, we were in business!

They sound fantastic! Really, really, pleased with these! They are very revealing to the source and other system components. On decent recordings they sound fine, but you can really tell the recording is bad -not the gear. On the stellar recordings in my collection- The music sounds downright real. Electronic music is really a lot of fun to listen too, Things "appear" in front of the speakers, behind the speakers, and next to the speakers. They are an absolute blast.

With that said, I'd like to get the most out of them. Are there any hard fast rules to placement in the room? At the moment, I've got them on 8" tall cinder blocks with footers and tilted slightly back. Should they be close to the wall? Out from the wall? I've got them out about 4 feet or so with the waveguides on the outside (mirror imaged pair), about 5 feet between them, and have them pointed where they cross right in front of the listening position. That seems to work, but I'd like to squeeze as much performance out of them as I can. I also have some room treatments that I'm also using that make a big difference as well.

Thanks again!
Chris

Subject: Re: Just finished 4pi build need some tips
Posted by Wayne Parham on Mon, 14 Oct 2019 15:13:14 GMT
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Very good. Glad to hear you got 'em together and they're sounding good.

The placement and orientation you have described is good. They might stand to be a little bit higher, but they're pretty good where they sit. I usually put mine on 15" stands, but again, there's not much difference so what you've got probably works very well.

I would encourage you to employ flanking subs. It will improve the lower midrange as well as provide deeper bass extension.
