
Subject: Johnny5's four Pi build

Posted by [johnnycamp5](#) on Wed, 01 Jul 2015 10:35:04 GMT

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New guy here .

I'm building a a pair of 4pi's.

I see a lot people build these floor standing speakers with a rearward lean to them.

In other words, the front of the cabinet sits slightly higher than the rear.

Others also put them on stands.

Which should I do?

Can someone tell me why this is?

Why not just put them flat on the floor?

Subject: Re: Johnny5's four Pi build

Posted by [Wayne Parham](#) on Wed, 01 Jul 2015 15:36:34 GMT

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Most people put speakers on stands to position them roughly at ear level. I generally recommend putting mains on stands and flanking them with subs. Study on flanking subs to learn more about that configuration.

The angle of the stands serves to "cradle" the speaker, because there is a back plate (or usually just a lip) that the speaker rests on. It doesn't take much tilt to allow gravity to hold them in place. The stands could be flat though, and the speaker could be secured in a different way.

The pattern is clean above and below the forward centerline +/-20° so some vertical tilt is OK. If the speaker is angled upwards, say 5°, then the vertical nulls would be positioned 25° above and 15° below.

Subject: Re: Johnny5's four Pi build

Posted by [johnnycamp5](#) on Wed, 01 Jul 2015 19:27:18 GMT

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Thanks Wayne.

Another question- Whats the deal with some builders putting "putty" or caulking all over the back of the waveguides .

I've seen some builds with this,and it would be easy enough to do before installing the waveguides, if it is indeed something I need to/should do.

Subject: Re: Johnny5's four Pi build
Posted by [Wayne Parham](#) on Wed, 01 Jul 2015 19:51:11 GMT
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I cannot detect an improvement either by ear or by measurement from adding damping material like putty to the outside of the waveguide. But it doesn't hurt anything either. Some people swear by the stuff and say it reduces bell resonance.

Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Wed, 01 Jul 2015 23:39:57 GMT
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I'm also considering trying a tube amp with these eventually (currently running an Adcom-555). Any suggestions? Perhaps mono-blocks that don't cost a fortune ?

Subject: Re: Johnny5's four Pi build
Posted by [Wayne Parham](#) on Thu, 02 Jul 2015 15:24:40 GMT
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I think you'll really enjoy that.

I personally own an Audio Note SET amp, an Image SET amp and a Heart Audio UL amp. The Audio Note amp is all tubes, and the other two have tubes in the signal path, but have solid state rectifiers in their power supplies. I use each amp several hours a day.

Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Thu, 02 Jul 2015 19:56:06 GMT
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Funny you should mention Audio Note.

As a first choice, I have been considering their single ended triode amp, the 300B Kit 1 standard version.

Secondly, the Odd Watt Odd blocks as a somewhat cheaper alternative, but I like the idea of all tube.

The problem is I am a tube amp newbie, and I am just unsure if it is powerful enough for these

4pi's?

Subject: Re: Johnny5's four Pi build

Posted by [Wayne Parham](#) on Sun, 05 Jul 2015 15:54:28 GMT

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They're perfect, both Audio Note and Oddwatt. In fact, those are my choices of amplifiers at trade shows, when demonstrating my loudspeakers.

Subject: Re: Johnny5's four Pi build

Posted by [johnnycamp5](#) on Tue, 07 Jul 2015 21:52:21 GMT

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Can the 4pi's be placed in corners like the corner horns, or are they better placed more out in the room and away from the corners?

The room in question is 25' long x 15' wide x 8' tall.

They will be oriented on the short (15') wall facing the length (25') of the room.

Subject: Re: Johnny5's four Pi build

Posted by [Wayne Parham](#) on Wed, 08 Jul 2015 13:47:43 GMT

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If you have two good corners, I'd suggest building constant directivity cornerhorns to take advantage of them. They are designed for that placement, and maintain acoustic proximity to the boundaries appropriate for the wavelengths involved. The bass bin and mid horn both work to achieve this goal.

Otherwise, use flanking subs to mitigate the anomalies that invariably arise from placement near boundaries. That's the next best thing, because you cannot get any other kind of speaker acoustically close to the boundaries, and most times, you can't get them far enough away either. So the use of DI-matched waveguide mains with flanking subs are the best option.

Subject: Re: Johnny5's four Pi build

Posted by [johnnycamp5](#) on Tue, 14 Jul 2015 21:49:37 GMT

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I'm moving ahead on my 4pi build.

All I need are the crossovers and waveguides and I'll be able to complete them.

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 - 2) [IMG_0311.JPG](#), downloaded 3615 times
 - 3) [IMG_0310.JPG](#), downloaded 3538 times
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Subject: Re: Johnny5's four Pi build

Posted by [Wayne Parham](#) on Wed, 15 Jul 2015 13:30:13 GMT

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Lookin' good!

Subject: Re: Johnny5's four Pi build

Posted by [johnnycamp5](#) on Thu, 16 Jul 2015 13:05:23 GMT

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Thanks Wayne.

I just have to decide what color to stain the cherry veneer. After that I'll shoot it with some satin clear and install the woofers, your crossovers and waveguides (once they arrive).

Regards!

Subject: Re: Johnny5's four Pi build

Posted by [Wayne Parham](#) on Thu, 16 Jul 2015 15:58:31 GMT

My wife and I were wondering what those black stripes were.

Are they paint? Formica? A darker wood?

Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Thu, 16 Jul 2015 19:16:36 GMT
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Google "acrytech".

It's an acrylic coating that musicians commonly use for the exterior of say, a bass amp cabinet/pa speaker and the like.

I had some left over from the last set of speakers I built and just sold- "b741scanspeak".

I only used it for the stripe because I had laid out/cut the veneer in the wrong orientation, and I only had enough veneer left to do the front panels with the grain running horizontal instead of vertical.

Therefore, I decided to keep the grain vertical, and throw in the stripe, so you're looking at a mistake .

I happen to like it this way, and the speaker covers will hide it if I choose.

Regards!

Subject: Re: Johnny5's four Pi build
Posted by [Wayne Parham](#) on Thu, 16 Jul 2015 19:35:58 GMT
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Oh, dude, that's cool!

Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Mon, 27 Jul 2015 22:22:23 GMT
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They have darkened quite nicely with no stain.
Here they are after several coats of clear (gloss) lacquer.

You can see the raw cherry veneer laying on the ground in front of them.
Quite a difference!

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1) [IMG_0324.JPG](#), downloaded 3504 times

Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Wed, 29 Jul 2015 22:26:34 GMT
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Hello all.

I'm wondering why I see so many 4pi builds with insulation installed on the bottom panel?

With the 4pi plans that Wayne sent me, under the "General construction tips", it states very clearly-

"Use R11 or R13 insulation, covering the interior top, side nearest the port and the rear".

It also says to hang a piece of insulation on the brace.

Therefore, there should be no insulation on-

- 1- the side opposite the port
- 2- The back side of the front baffle
- 3- The bottom.

Wayne sent me the plans about three weeks ago.
Have the 4pi's been revised?

Subject: Re: Johnny5's four Pi build
Posted by [Wayne Parham](#) on Thu, 30 Jul 2015 19:54:30 GMT
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Nope, no change. You've got it right.

Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Sun, 02 Aug 2015 21:54:48 GMT
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Updates:

My i-phone pics suck but-

The clear, gloss lacquer has dried for more than a week.

I have gone ahead and rubbed the dried lacquer with 0000 steel wool, and applied and buffed out paste wax, all in an attempt to achieve a satin sheen.

It seems to have worked for the most part, although I might call it more of a "semi gloss".

How do you all think they would sound in this configuration?

I sourced some genuine JBL recones, so while I had them stripped, I went ahead and did the final fitment to the boxes and installed the "Nutserts" or "threaded inserts" for the woofer screws.

"The saga continues"

Regards!

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1) [IMG_0329.JPG](#), downloaded 3529 times

Subject: Re: Johnny5's four Pi build
Posted by [Wayne Parham](#) on Mon, 03 Aug 2015 19:33:20 GMT
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They might sound a little quiet that way, but they sure look great!

Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Tue, 04 Aug 2015 18:11:57 GMT
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I'll venture to say,
they would certainly be the most "transparent"
speakers I've ever listened to .

Subject: Re: Johnny5's four Pi build

Posted by [johnnycamp5](#) on Thu, 10 Sep 2015 10:27:46 GMT

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Work has been busy for me, I'm about a month late to finally posting these build updates/pics .

I got the horns recessed/routed 1/4" in to the cabinets. I had to make a jig that I clamped on to the cabinets, which took longer than finally routing in the recess. This was somewhat nerve racking, as the veneer was already installed, but it worked out fine.

Although I understand there is no measurable difference with the exterior surface of the horns being coated vs. uncoated, and many can not hear a difference, I chose to coat them anyway, since Wayne says it can't hurt. I suppose this could be described as the "herding instinct", where you see so many others do it, you fall in line and do it yourself .

I used "Gardner Bender Duct Seal", to coat the outside of the horns. It is non toxic, resists high heat or cold temperatures, and never dries out. It's also extremely sticky. I used two pugs per horn, 4 lbs. total for both horns.

I made speaker covers using craft sticks, 1/4" thick x 2" wide x 4' long poplar sticks from the Depot, doubled up in thickness.

I criss-crossed the ends and used wood glue throughout.

Found some see-through material at Joanne's Fabrics. It looked similar to the acoustically transparent, black material I have gotten from P.E.

I'm hoping it will be just as acoustically transparent, as while holding it up to the light, I could see through it just the same.

Now It's just a matter of hooking up the crossovers to the speakers, and letting them rip!

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2)	IMG_0381[1].JPG	, downloaded 2518 times
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4)	IMG_0358[1].JPG	, downloaded 2174 times

Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Thu, 10 Sep 2015 15:57:56 GMT
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Here's a few more pics.

File Attachments

1) [IMG_0385\[1\].JPG](#), downloaded 2526 times
2) [IMG_0386\[1\].JPG](#), downloaded 2551 times
3) [IMG_0387\[1\].JPG](#), downloaded 2527 times
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Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Fri, 02 Oct 2015 23:30:46 GMT
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I consider these speakers a success .

I have been running them for two or three weeks now, and they are sounding awesome in general.

They seem to have an initial break-in period, sounding better and better (especially the bass) with time.

These get louder than my last set of speakers, so no need to crank up the volume as high.

The 4pi's seem much more dynamic than my old speakers as well.

Its nice to have bass response that you can clearly both hear and feel, instead of only somewhat hear and not at all feel.

I have been using my old Adcom 555 (somewhat sterile) s.s. amp with these speakers, but I am now going to try a tube amp.

Ill be building an ANK 300B kit-1.

I have read on numerous occasions, that these set amps work well with these 4pi's, and some

other high sensitivity speakers,
so i'm going to give it a shot.

Subject: Re: Johnny5's four Pi build
Posted by [Wayne Parham](#) on Sat, 03 Oct 2015 19:25:32 GMT
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That's excellent!

Please report back on your Audio Note build too.

Congrats!

Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Wed, 28 Oct 2015 21:31:29 GMT
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So the Audio Note 300B kit-1 arrived today.
I'll have to get to starting the build soon.

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- 1) [IMG_0484.JPG](#), downloaded 2246 times
 - 2) [IMG_0487.JPG](#), downloaded 2275 times
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Subject: Re: Johnny5's four Pi build
Posted by [Wayne Parham](#) on Fri, 30 Oct 2015 21:31:14 GMT
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Excellent!

That's going to make a very fine system.

If you have time, please post pics of your amplifier build as it progresses. Then you'll have it permanently documented for prosperity!

Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Mon, 02 Nov 2015 20:28:34 GMT
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I didn't take very many good pictures of the amp build, I pretty much assembled one board at a time, and then photographed them.
It is almost complete now.

I was not very excited on taking many photos to show, because of the crummy, low resolution results I usually get from my i-phone.
Although, looking at the photos uploaded, some look a little better than I thought.

The pics are out of order. The ones with the transformers next to the chassis was at the beginning of the build, where you feed their wires through the rubber grommets of the chassis.

Well.....

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1) [IMG_0499.JPG](#), downloaded 2087 times

- 2) [IMG_0500.JPG](#), downloaded 2077 times
 - 3) [IMG_0503.JPG](#), downloaded 2042 times
 - 4) [IMG_0504.JPG](#), downloaded 2067 times
 - 5) [IMG_0505.JPG](#), downloaded 2065 times
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Subject: Re: Johnny5's four Pi build

Posted by [johnnycamp5](#) on Mon, 02 Nov 2015 20:37:55 GMT

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...A few more.....

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 - 3) [IMG_0540.JPG](#), downloaded 2022 times
 - 4) [IMG_0544.JPG](#), downloaded 2026 times
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Subject: Re: Johnny5's four Pi build

Posted by [Wayne Parham](#) on Mon, 02 Nov 2015 21:30:54 GMT

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Nice work so far!

What options did you get? Looks like you got Cerafine bypass electrolytics and Mundorf signal caps. I think those are great choices.

Subject: Re: Johnny5's four Pi build

Posted by [johnnycamp5](#) on Tue, 03 Nov 2015 11:33:52 GMT

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Hey Wayne.

Im sorry I'm not versed in understanding all the differences in capacitors like you are.

The 4 laid over caps on the driver board read "M caps" or "Mundorf supremes".

The four smaller ones are- rubycon black gates (two closest together on driver board) and the two farther apart on the board just have an "M" on them.

Honestly, when I ordered, I wasn't sure what to request as far as cap upgrades, but Brian offered an "oil and paper caps" upgrade.

Perhaps those are the upgraded caps?

I'm having trouble with an extra bag of components (attached pic) that came with the kit, that is not illustrated or described in the build manual.

When I opened the box upon delivery, this bag was ripped open, and its contents were strewn throughout the "popcorn packing" within the box.

I think I was able to recover all the components, although they are quite small .

I have tried to communicate with Brian (through e-mail) from Audionote kits about if I have lost any of the parts, or how to implement them, but I have not gotten a response.

He did say he was going away last week, would be back Monday (yesterday), so hopefully he can help me out.

The extra bag contains another pcb, with some extra resistors and a few caps. I believe it is for the "power amp" version of the kit (the one I ordered), where no volume knob is used, but I'm not sure.

Regards!

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1) [IMG_0537.JPG](#), downloaded 1298 times

Subject: Re: Johnny5's four Pi build

Posted by [Wayne Parham](#) on Tue, 03 Nov 2015 16:29:08 GMT

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I like the capacitor choices you got. I'm not one of those that assumes higher cost capacitors always bring better quality. But I do like certain technologies. I prefer poly film/foil caps, for example, where size allows.

Subject: Re: Johnny5's four Pi build
Posted by [johnnycamp5](#) on Fri, 04 Dec 2015 13:33:30 GMT
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Been rather busy, haven't updated in a while.

My kit-1, 300B set amp has been completed for more than two weeks now.
The pcb and extra tiny caps (in post/pic above) were all part of the attenuator (volume) knob which I did not need.

When I checked voltages (carefully!) with Brian from Audio note kits, he said all was well.
When checking voltages, I would hear a slight high pitched sound coming from the regulator/filament board. Then tiny amounts of white smoke would come from one of the bridge rectifiers .

It ends up one of the leads that stick out through the bottom of the pcb had laid over and contacted the next lead. I suppose this happened when I cut these leads off the bottom of the board. Time for me to wear my magnifiers every time I do electronics/soldering!

I explained this to Brian, and he sent me two new Bridge rectifiers right away, so I replaced the one that was shorting (and splitting!) and now all is well.

I've only been using the amp for a couple of weeks, so this is an early response to how it sounds.

My first general impression is- like Wayne has said, the differences between amplifier topologies seem stark.

The "magic midrange" that a set amp is supposed to provide seems true, though not as paradisaical as some set fanatics would have you believe.

The high end is nice, while not having the "etched" sound I might describe of my ss amp.

My impressions of the bass are what you might expect when going from a ss amp to a tube amp. It has a fuller, more "round" sound to it, yet at the same time sounds a bit "loose" compared to my ss.

After a few more weeks of becoming accustomed to the way this amp sounds, I intend to switch back to my Adcom 555, and give my final impressions.

Regards!