Subject: 2pi, 3pi, Zaph ZA5.3 for In-Wall LCR?
Posted by corradizo on Thu, 28 Aug 2014 17:33:18 GMT
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Hello,

I'm new to this hobby and have been reading for weeks on speakers, have built a couple of subs etc. I've planning to build in-walls as LCR to flank the sides of my 60" LCD wall mount TV that is on a 8' wide wall that's part of a bay (side walls connect to the 8' wall at a 45deg angle and are 3' long, I sit 12' away.

I have narrowed down my options to:

2pi

3pi

DIYSoundGroup's Fusion4Quad4 (talked to the designer and he said they'd be fine buried mostly into the wall with some of the baffles sticking out).

DIYSoundGroup Fusion 12, DNA360 w/ Delta10a driver (custom set up from TuxedoCivic).

Zaph Audio ZA5.3 iw kit (93db sensitivity)

As you can see two of my options use "regular" tweeters and the remainder use CD with waveguide. I'm not sure what to do. I'd say my listening habits are 50/50 Movies and Music. If I had room to do a dedicated listening room, i would likely persue that. Music is quickly overtaking precedence over movies since i purchased some Behringer 212xl PA speakers based on what i read over on AVS. I really like them! My wife REALLY hates how they look but likes the sound too. My receiver, onkyo tx-nr609 is stable to 4ohms (175w) and will do 8ohm of course at 100w per channel so i think any of these will work. Can you help me decide? I'm a bang for the buck guy, so right now at 100 dollars for each 2pi, they look like a great option with a big 10" driver.

While we discuss, can someone perhaps share the plans for the 2pi/3pi so i can read over them?

thanks,

Pete

Subject: Re: 2pi, 3pi, Zaph ZA5.3 for In-Wall LCR?
Posted by Wayne Parham on Fri, 29 Aug 2014 16:41:18 GMT
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I'll refrain from comment on the technologies you may choose from, except to say that these speakers have been compared before in various forums. You might want to look at the H290C Horn/Waveguide thread for detailed information on our waveguide implementation. There is a

important is it?". If you search the net, you'll find many other threads on this and similar topics.

After you've done your research, when you decide with model you want to build, let me know and I'll send plans. You might choose one model for mains and another for surrounds. Please decide

page.

I would suggest that you study the differences between speakers having uniform directivity and those that don't. That's what speakers with waveguides strive to achieve - uniform directivity. They do this with varying degrees of success, and over a varied range of the audio spectrum. Look at the pros and cons of that, and the trade-offs involved. It's a set of competing priorities, like most other things. So you have to decide what's important to you, considering your application and your budget.

Subject: Re: 2pi, 3pi, Zaph ZA5.3 for In-Wall LCR?
Posted by corradizo on Sat, 30 Aug 2014 12:19:37 GMT
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Thank you. I've read through the links you send and some more threads I've found. I can't say I understand it all completely, but its starting to sink in. I now can better understand what I see in many of the REW graphs I see out there about these designs. The biggest giveaway im now seeing is the 5db fluxuations, crossovers that are crossing too high and to look for the ripple effects. In short, I think I found the right place! I'd like to start with 3pi in-wall as mains with phantom center. I'd like to replace my surrounds with 2pi in-walls too. Can this work in-wall? Do I just do a baffle board mouted to the wall with no box behind? or build a shallow box so the drivers were on the same plane as the wall and put it in the wall? Built the speakers as you have designed them and sink them into the wall with half sticking out? my walls are 5.25" deep.

Thanks Pete

Subject: Re: 2pi, 3pi, Zaph ZA5.3 for In-Wall LCR?
Posted by Wayne Parham on Sat, 30 Aug 2014 14:55:58 GMT
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You've got mail! I sent the plans. Build them as-designed, and recess them into the wall.

There are some posts about this listed in the FAQ, by the way. They are in the "Room Effects and Loudspeaker Interactions" section, and discuss boundary conditions.

Subject: Re: 2pi, 3pi, Zaph ZA5.3 for In-Wall LCR?
Posted by corradizo on Sat, 30 Aug 2014 16:20:56 GMT
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thank you! I completely missed that part of the FAQ. I didn't realize large these are. I may need to consider the 1pi for surrounds. may I trouble you for those plans? I will likely buy the kits as I can't really read the xover diagrams very well.

thank you,

pete

Subject: Re: 2pi, 3pi, Zaph ZA5.3 for In-Wall LCR?
Posted by Wayne Parham on Sun, 31 Aug 2014 12:07:25 GMT
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You've got mail!

Subject: Re: 2pi, 3pi, Zaph ZA5.3 for In-Wall LCR?
Posted by corradizo on Tue, 09 Sep 2014 16:00:11 GMT
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Going to be a long post...sorry.

Due to budget right now, it looks like the 3pi are out of my reach. The Zaph stuff it out because I think going from my existing 8" 3 way inwalls to smaller drivers will only disappoint me less sensitivity too. Swept volume wise the MTM zaph are more than a 1pi but not as much as the 2pi. I think the more air my LCR can move the better? (is this silly to think this? - i know it applies in IB Subs.

So I have to choose between the 2pi and 1pi. The prospect of tearing up my wall further, is seemingly only going to be a bunch of work I don't want to do. So now i'm thinking to mount them to the wall and put a couple of 2x6's behind my TV wall mount to push the TV out a bit to make it look better. So I will build either the 2pi or 1pi and wall mount them as an LCR setup. With the L and R upside down to get the tweeters in better alignment with the tweeter of the center channel which will sit below the TV. I'd be building grills for each to hide how the upside down setup would look. At 10" the 2pi is going to be too think for WAF and at 8.5 the 1pi is also going to be too thick. The TV sits 3.5" off the wall now, adding the 2x6's will push it out to 5". So i think i can have them stick out a little past that, say 2". I've been using Boxnotes to design the boxes i think will work. This app tells your the resonances you'll have in the box based on it's dimensions. It tells me that the stock 2pi has it's lowest resonance at 326hz. I understand that i'm entering uncharted territory. The boxes i have designed are wider, taller and thinner and their 20 x 27 x 6.5. The lowest resonance is 262hz. Will R13 take care of that or is that too low? I can get it up

closer to 300hz, just not sure where the cut off is.

thanks,

Pete

Subject: Re: 2pi, 3pi, Zaph ZA5.3 for In-Wall LCR?
Posted by Wayne Parham on Tue, 09 Sep 2014 21:21:06 GMT
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Push that lowest mode up above 300Hz. The lower mids are where we start losing damping from the insulation, so raise that up a bit. You can also use a sheet of insualtion spanning the cross-section to increase its damping ability in the lower midrange frequencies.
