

---

Subject: Re: Modified 4 Pi Build Report

Posted by [Dave\\_S](#) on Mon, 18 Jul 2011 01:09:50 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

Quote:Hmm...your build looks vaguely familiar...

<http://audioroundtable.com/forum/index.php?t=msg&goto=61737>

Your design is probably where I started. Thanks. I didn't realize that the final speakers were so similar since my design went through so many iterations. I took your window design for the internal brace. Your post also directed me to WinISD. With the speakers, about the only choice is to have dual ports. I really wanted to use two square ports like the original 4 Pi, but Wayne's feedback on your idea for a long thin port talked me out of that. The two rectangular ports rotated 90 degrees to the original orientation would have been similar enough to a long thin slot. Your ports are more streamlined than mine. I went with flared ports and the flares make their diameter substantially larger -- almost obnoxious. The flares are supposed to reduce whistling from air movement, but I have a hard time believing that I will ever hit the volume level where that would be an issue. I missed Wayne's suggestion in your post of measuring impedance to detect standing waves. It is something that I will have to look into.

I also used the following link for the beveled edges and darker wood strip: DTWQT speakers. That design feature is probably better for small drivers, since my speakers ended up being 23 inches wide. The width also preserved the golden ratio better for speaker dimensions. The golden ratio (internal length/width/height ratios of .61 x 1 x 1.61) is supposed to reduce standing wave issues. It is probably a silly ratio and the importance is often discounted nowadays, but I didn't want to find out that I was wrong. I winced when I held a tape measure up to where I was placing them during the design. It is amazing what a few extra inches will do to the size of the speakers.

I don't remember where I took the base design from. It was originally a simple slab at one time like other speakers, but I decided to go with the cove molding to raise the horn elevation by a few more inches after my initial sound testing. In addition, I was trying to give the speakers more of a furniture look. I like having a base so that I can slide the speaker around without worry.

Did your friend with Klipsch speakers ever listen to your speakers and offer an opinion? My biased comparison with 18 years of cloudy memory in between is that the 4 Pi speakers have a similar sound, but use better drivers that can generate more accurate sound reproduction. I have not heard my final speakers with all braces and acoustic insulation in place yet.