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Subject: 6 Pi  
Posted by [rkeman](#) on Wed, 12 Oct 2011 23:41:51 GMT  
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Could you please forward the plans for the 6 Pi? Thanks.

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Subject: Re: 6 Pi  
Posted by [Wayne Parham](#) on Thu, 13 Oct 2011 00:13:47 GMT  
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Subject: Re: 6 Pi  
Posted by [rkeman](#) on Thu, 13 Oct 2011 12:40:36 GMT  
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Thanks for the plans. There are a few question that you may be able to address regarding the 6Pi:

Is there a preference between the Eminence Alpha 10 and Delta 10? The exclusion of L2 in the crossover when the Delta 10 is used is interesting and partly makes up for the difference in cost between the drivers, but maximal performance is the goal. The JBL 2012 listed in the crossover schematic doesn't appear to be available anymore.

Are there any crossover modifications necessary for the Acoustic Elegance TD12S woofer? The crossover schematic doesn't specifically address this driver.

The 3Pis in my home theater are outstanding and the front pair would be used for the woofers and tweeter horns. One 6Pi would be in a room corner and the other in a "short" corner with the common back wall and 5.5 foot length side wall. Bass absorbers fill the corners at present and the triangular top absorbers (24" wide at the face and 48" tall) could remain while accomodating the height of the 6Pis. Any insight that could be provided would be useful in guiding my decisions.

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Subject: Re: 6 Pi  
Posted by [Wayne Parham](#) on Thu, 13 Oct 2011 12:57:08 GMT  
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The Delta 10 is the preferred driver. The Alpha 10 can also be used, but the Delta is better for this application.

No crossover changes are needed to use the TD12S in this model; It's the same whichever driver

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is used. This is largely because no Zobel is required. The relatively low crossover point is in the range where impedance is pretty flat in most woofers.

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Subject: Re: 6 Pi

Posted by [rkeman](#) on Thu, 20 Oct 2011 13:17:48 GMT

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How would you compare the 3Pi and 6 Pi in regards to midrange and midbass performance. The frequency response of the 3Pi (measured in room and outdoors using the Dayton Omnimike) is quite uniform and distortion very low. Are those characteristics shared by the 6Pi? Would the midbass (80 - 200 Hz) likely be smoother (less room interaction) given the horn loading of the 6Pi?

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Subject: Re: 6 Pi

Posted by [Wayne Parham](#) on Thu, 20 Oct 2011 14:24:27 GMT

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wavefront propagation. That's a real big deal.

One of the dirty little secrets we rarely talk about is the fact that floor bounce, rear wall bounce and vertical modes make a mess of the lower midrange. It almost doesn't matter how nice the response of a midwoofer is once the vertical modes and rear wall notch chop it up.

The only way around this is to make the speaker be acoustically close to its nearest boundaries. This limits us to two choices: soffit mount the speaker or use a constant directivity cornerhorn. The next best thing is to use flanking subs to smooth the response in the 80-200Hz range.

So my suggestion has always been to use constant directivity cornerhorns where you can, and DI-matched two-ways with flanking subs where you can't. The constant directivity cornerhorn will always be better, provided the room has the right corners. It doesn't need flanking subs, because the problem solved by them doesn't exist in constant directivity cornerhorns. They're acoustically close to the adjacent walls. But the truth is, most people don't have the right corners, so I developed the flanking sub approach to solve the problem of self-interference from the closest boundaries when using more traditional loudspeakers.

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Subject: Re: 6 Pi

Posted by [rkeman](#) on Wed, 09 Nov 2011 13:41:43 GMT

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Here is a photo of the room with the "short" corner. How do you think the 6Pi might fare?

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### File Attachments

1) [DSC\\_0001.jpg](#), downloaded 4035 times

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Subject: Re: 6 Pi

Posted by [Wayne Parham](#) on Wed, 09 Nov 2011 18:44:36 GMT

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That will work. Obviously, we'd prefer a symmetrical pair of corners, but that's enough wall space to form waveguides for the range that matters - the range above the Schroeder frequency. Below that, room modes set the pattern anyway. Put subs in opposite corners or wall midpoints on each side and you'll have that part covered too.

speakers. Constant directivity cornerhorns are a little different though. They have no need for flanking subs, because there is no reflection from the wall behind the speaker and the midhorn and woofer blend to smooth vertical modes.

wall midpoints often work best. You'll also want low-pass to be at a lower frequency for these more distant multisubs than you would with flanking subs. We're looking to them to smooth the range a little lower in frequency.

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