
Subject: Baffle wall

Posted by [dutchswan0311](#) on Tue, 28 Feb 2012 02:08:01 GMT

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I have been doing research on baffle walls behind AT screens and how to build one. Many people are saying that a baffle wall is either an excellent idea or a terrible idea depending on the speakers used. Wayne; what do you recommend for the 4pi when they are used as the LCR mains behind an AT screen?

Subject: Re: Baffle wall

Posted by [Wayne Parham](#) on Tue, 28 Feb 2012 03:27:46 GMT

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It's good when they're back up against the wall, even better when embedded in it, baffle flush with the wall.

The closer you can get a speaker to the boundary, the less problem from self-interference there is from it. But if you can't put it within a couple feet from the wall, it's best for it to be really far away. That's why most audiophile believe that the speakers should be far from walls - They should, unless they can be acoustically close to the boundary, which is even better.

Speaker placement and wavefront launch (A visual representation on how walls affect the wavefront)

Subject: Re: Baffle wall

Posted by [dutchswan0311](#) on Fri, 27 Apr 2012 15:07:45 GMT

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2nd Question related to utilizing a baffle wall:

I have been researching what material to put on the baffle wall. Most say that a sound dampening material should be used to absorb anything reflected off the back of the AT screen. Someone else mentioned that doing this would lose some benefit the 4pi has when being flush mounted.

What do you recommend Wayne?

Subject: Re: Baffle wall

Posted by [Wayne Parham](#) on Fri, 27 Apr 2012 15:39:13 GMT

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A couple of posts about the subject of soffit mounting:

4Pi soffit mounting

3Pi wall baffle There are a few linked pages in each of those threads. Be sure and read the content contained in each of the links because they describe the underlying issue - which is actually directivity. In-wall mounting makes the minimum radiating area be halfspace, so there is

no transition from freespace.

About the surface of the back wall, if the speaker are flush mounted, it doesn't matter what the surface is because it will not act as a reflector. If the speakers are pulled away from the wall, then reflectivity does matter and it could benefit from damping. The problem is the frequencies you really need to damp are so low nothing really works.

At high frequencies the speaker is directional enough that the wall behind is not an issue. At lower midrange frequencies where the reflection can be a problem, no damping material helps. It's not thick enough. That's the reason we use flanking subs - Their job is to reduce anomalies caused by the nearest boundaries, the back wall being the biggest offender.

Speaker placement and wavefront launch
Room modes, multisubs and flanking subs

Subject: Re: Baffle wall

Posted by [dutchswan0311](#) on Fri, 27 Apr 2012 17:16:37 GMT

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But won't the back of the AT screen reflect back onto the front of the baffle wall? And wouldn't the sound that is reflected onto the baffle wall reflect back on the the back of the AT screen (in an endless cycle)?

Subject: Re: Baffle wall

Posted by [Wayne Parham](#) on Fri, 27 Apr 2012 17:38:30 GMT

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Yes, because screens aren't perfectly transparent acoustically. They reflect some sound, so they act just like you're talking about. This manifests itself as response ripple. There's a measurement of this on the page below, comparing the response of a speaker with and without a screen in front of it. There's also some discussion about what to do about it.

Three 4Pi's in Basic Black for Home Theater

Subject: Re: Baffle wall needed for 4pi use as LCR?

Posted by [dutchswan0311](#) on Fri, 27 Apr 2012 17:50:03 GMT

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Man Wayne, you sure do make me read a lot.
