
Subject: Re: Three 4Pi's in Basic Black for Home Theater Build Thread

Posted by [BigmouthinDC](#) on Tue, 31 Aug 2010 14:16:56 GMT

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Wayne another technical question. I wonder if you have any experience with the 4PIs in a baffle wall mounting.

Currently my front wall behind the screen is entirely treated with linacoustic but I could also build a baffle wall flush with the fronts of the speaker the same size as the screen.

<http://www.thx.com/professional/cinema-certification/speaker-layout-and-baffle-wall/>

In my research I found this quote in a JBL manual:

Baffle loading

For optimal results, JBL Professional recommends the installation of screen channel speakers in a full

baffle wall, such as recommended by Lucasfilm/THX[®] and others. Good results can also be achieved using

reinforced baffle "wings" on either side of the speaker system stacks, as long as they are constructed using

high quality materials and are free of resonances and vibrations.

The preferred baffle wall design extends from interior theatre wall-to-wall, and floor to ceiling, essentially

creating a room behind the screen, into which the speakers are flush mounted, firing into the auditorium.

For practical and budgetary reasons, this concept can be modified, still yielding good results, but optimal

performance is typically achieved in a full baffle wall condition.

Full Baffle Wall

The speakers should be located in the baffle wall so that the front of the LF cabinet is flush with the front of

the baffle wall acoustical treatment material (typically black faced duct-liner).

Another post on a discussion of baffle walls had this quote from Dennis Erskine (well respected theater designer, board member CEDIA)

"A baffle wall should:

run stage to ceiling, wall to wall

be very rigid

allow no resonances in the cavity behind the wall

be covered with 1" (sometimes more depending on speaker) of a black absorptive material (reduces reflections between the screen and the wall.

have the speakers resiliently mounted to the baffle

have no air gaps between the speaker body and the baffle wall

have all front speakers including the front subs in the same continuous baffle.

The speakers themselves should be covered with the black absorptive material with cut outs for the drivers.

Problems. You best have your speaker placement exact for proper listening and sound stage creation ... you're not moving them later. Understand, speaker frequency response will change (partially why the baffle is treated with absorption).

Do a search on 2 pi speaker response or spatial loading to get started. I believe QSC Audio has a paper on their website about this. Really good speaker companies will have FR plots and data available for their speakers for 2 pi installations."

Any thoughts?