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Subject: Retrofitting Altec 612 cabinet for a 4pi build

Posted by [lowtrail](#) on Fri, 12 Jul 2024 15:30:28 GMT

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I have an empty 6cu. ft. cabinet I want to do something with. I'm curious if the 4pi might work in this enclosure using a combination of volume reduction strategies.

You can read the full backstory on this thread on DIY Audio.

I was encouraged to ask the group here for advice.

Some specific questions I have:

1. Has anyone had success building 4pi in larger enclosures? If so, how was the xo modified? I have no experience with xo design.
2. If I were to subdivide my 6cu ft. enclosure (woofer chamber and horn chamber) to give the woofer the same volume as the standard 4pi build, would the xo need modifications? Port location would presumably change.

Looking forward to an education :) I'm very new to all of this.

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Subject: Re: Retrofitting Altec 612 cabinet for a 4pi build

Posted by [Wayne Parham](#) on Fri, 12 Jul 2024 20:15:58 GMT

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I wouldn't change the dimensions of the cabinet for these reasons (from the Pi Speakers FAQ):

Cabinet design, port placement and internal standing waves

Damping material placement

Altering Dimensions

I realize you are talking about reducing the internal volume by partitioning, but I did want to comment on the subject of larger cabinet volume, nonetheless. One can gain bass extension with a larger cabinet, provided internal standing waves in the midrange are mitigated. But what I suggest instead is to use flanking subs, which serve three purposes:

1. They provide bass extension
2. They provide baffle step mitigation
3. They provide mitigation of SBIR and higher-frequency room modes.

More on that:

Room modes, multisubs and flanking subs

Helper Woofer Location

Flanking Subs vs Helper Woofers

Benefits of Flanking Subs

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Subject: Re: Retrofitting Altec 612 cabinet for a 4pi build

Posted by [lowtrail](#) on Wed, 17 Jul 2024 14:09:08 GMT

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Thanks for the helpful links, Wayne.

I will likely take the Econowave approach and use this for a platform for experimentation and learning.

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Subject: Re: Retrofitting Altec 612 cabinet for a 4pi build

Posted by [Wayne Parham](#) on Wed, 17 Jul 2024 19:14:53 GMT

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There you go! That's a fantastic idea!

Evan Flavell (Zilch) would love that cabinet. He'd be proud!

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