Subject: Two PI-tower WAF compromise
Posted by themilford on Fri, 27 Aug 2010 19:31:39 GMT
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Hey guys,

Long time no post... Quick question.

I'm struggling a little with the WAF on the 2PI towers I'm building. So, could I build the 2PI speaker/tower in a 2.8 ft3 box (31x14x11) to good results? what would I tune this box to (fs)?

I guess it would be somewhere in between the regular 2PI and the Towers... would there be a benefit over the former or much of a shortcoming to the later?

Thanks!
David

Subject: Re: Two PI-tower WAF compromise
Posted by Wayne Parham on Fri, 27 Aug 2010 19:49:56 GMT
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You can make a box between about 1.5ft3 and 5.5ft3 tuned to 40Hz and make the Alpha 10 happy.

The thing with the larger boxes is the possibility of internal standing waves lining up in a deleterious manner. What you don't want is a pressure node lining up with the port. That causes response anomalies.

Small boxes are kind of easy because standing waves line up at higher frequencies where the insulation is pretty effective at damping them. But the larger the box, the lower the frequencies where standing waves (fundamental and harmonics) line up. When they line up in the lower midrange, the insulation isn't very effective at damping. So if a large cabinet is going to be used full range, it makes it important to analyze standing wave frequencies in addition to the Helmholtz frequency. It's also why I recommend having acoustic insulation span the cross-section in addition to lining three sides of the cabinet. It helps damp the midrange inside the cabinet.