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Subject: Re: 4Pi's and JBL 3678 looking for plans  
Posted by [Wayne Parham](#) on Mon, 16 May 2011 15:27:50 GMT  
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Well, of course, you can do a lot of things, but the real problem is that once you change dimensions of the box by any significant amount, you'll change where the standing waves line up in the box. You'll have to verify your changes with measurements.

One of the difficulties of designing high efficiency two-way speakers is the boxes are physically large, so standing waves line up in the lower midrange. Those are at a frequency that's tough to damp with insulation. You really have to position the woofer and port where response is best. The goal is to make sure a pressure node doesn't line up on the port or woofer.

Subwoofers are easy to tune because the wavelengths are so long. If there's no midrange presented to the woofer, you don't have to worry about internal standing waves, so modifications of layout and cabinet shape don't matter. But when you're making a high-efficiency speaker that uses a midwoofer, one that reproduces bass and midrange, this is a real consideration.