
Subject: Re: Eight Pi

Posted by [Wayne Parham](#) on Tue, 08 Feb 2011 15:57:35 GMT

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It's hard to say what the mods you've proposed will do. Baffle mounting of the tweeter is not a problem, but resizing and shaping the box is not so easy to judge. You'll need measurement equipment to know for sure.

The thing to watch out for is internal standing waves. In any cabinet larger than about 2ft³, you have the potential for internal standing waves making ripples in lower midrange response. At higher frequencies, the insulation effectively damps the sound inside the cabinet. At lower frequencies, cabinet dimensions are too small. But in the upper midbass to lower midrange, where the cabinet dimensions are at wavelength scale, standing waves form and they can adversely affect response significantly.

This is a tough range to deal with. You have to use a multi-faceted approach, putting source locations and cabinet boundaries in the right positions with respect to each other. The goal is to make internal reflections line up so that pressure nodes aren't in troublesome positions (like where a driver or port is). It also helps to space insulation out away from the cabinet walls (in addition to the sheets that line the walls). A properly placed sheet spanning the cross-section will damp the difficult lower midrange frequency modes better than just lining the walls will. This is especially true if the insulation is where a high pressure node sits. It will damp that node best.