Subject: Dual-driver sub basshorn plans
Posted by Adrian Mack on Sun, 23 May 2004 06:12:04 GMT
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I've decided I still want a horn that is smaller than the 18" basshorn I designed last time. The only way is to get smaller drivers. My application requires its compact, especially more so because the subbass horn may have to be placed come 30-40cm out from the wall to make it function properly, hence I want it physically as small as I can get so it doesnt take up huge floor/people moving space in total. Here is a little horn just designed: I got in a true 3meter path length (right down the center - see dotted line in diagram) and the mouth is 2558cm^2. The mouth rapidly opens up in the last 15cm so my guess it will 'seem' more like a 2200cm^2 mouth or so, which is just fine. Expo flare.It uses TWO 10" drivers, using two can get a smaller size and deeper bass extension. I modelled up the Peerless CSX 10" 850146 and here is the response curve with 100W input power (drivers wired in parallel):So it reaches 27Hz at its low end. At 26Hz it is only 1db lower in gain so you could say it will do 26Hz actually - not bad for the size. The crossover at 70Hz~80Hz to the mains will smooth out the slightly rising response but it isnt' an issue anyway, only about a 3db 'shelf' and will definitly get rid of the peaks. I choose to model the dual CSX 10" because:*Peerless is a high quality manufacture from experience with their products*Has a shorting-ring in magnetic structure to reduce distortion and improve linearity*Extended 4-layer high power VC, 200W each or 400W total*Works for my applicationHorn size is 108cm high, 60cm wide, and only 80cm deep - all external dimensions and MDF is 25mm. Now all I have to do is build it :PIt will be sad to stop using my big 18" driver but the benefits are probably worth it. The basshorn can do 120db with 30watts compared to 500watts for my vented 18" sub - huge difference! And the horn can still do much more than 120db! Anyway ~~ any comments?BTW: probably a variety of other drivers that will work with it tooAdrian