Subject: Re: PiAlign program
Posted by Adrian Mack on Wed, 28 Jan 2004 05:18:36 GMT
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Hi DavidHave been reading this thread, do you want to design a basshorn or something? With rear chamber? In terms of size, remember that you need a horn long enough to reach the desired Fc. Horn length primarily determines this and should be 1/4 wavelength of the lowest frequency to be used. Mouth size should also be of reasonable area, if a basshorn, then corner loading will obviously reduce the size needed considerably (the room will form part of the flare). Use Hornresp to determine a suitable area. Rear chamber can be vented or sealed - the system will act as a direct radiator somewhere below Fc. If you want to run your system so that direct radiator mode provides useful output then keep Fc well above Fb. If you do this, then response falls at 12db/oct below Fc until sensitivity becomes that of the driver in direct radiator mode. Below Fb, it will drop at 12db/oct again, or 24db/oct if a vented rear chamber. In particular this is a good idea if a short horn is used such as to keep size down, and this sounds like exactly what you wanted to do. Of course, the better thing to do is to simply use a longer horn with Fc at the lowest frequency you want to reach, that way you gain the most benefits out of horn loading over your whole bandwidth. Then you can reactance annul it if you wish. Also remember that if you do the short horn + rear chamber, that excursion will jump up high in the direct radiator region as acoustic impedance gets lower, you loose out benefits of the horn in direct radiator mode. So you can get acoustic output to a lower frequency, but excursion-limited power handling goes down too, hence limiting total SPL. If space is a concern though, it is one way to extend low frequency response. Adrian