Subject: Re: Choices and optimizations
Posted by Adrian Mack on Sat, 13 Sep 2003 06:25:13 GMT
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Hey Wayne,It sounds like theres a large range of possibilities by varying box size and tuning. I think that in a ported system, theres no way to say how larger or smaller boxes change the overring because the port will have a huge impact. So it sounds like a box that is a little overdamped will have the least ringing, and one where the port tuning/box size combo makes an underdamped response will tend to ring more (and I think Fb is shifted upward). Is there also benefit in attenuated overring by making Fb about 10db lower than the part which is flat?Could we liken it toward a sealed system. Say a Qtc=2.0 sealed box, and a ported box with its underdamped response made to closely follow it with same -3db point, will both produce high overring, and about the same amount of it too. And then take a Qtc=0.5 sealed system which rings very little, and a ported system which is made to resemble this overdamped response with the same -3db point, regardless of the ported boxes size, will both ring about the same? (and for that fact, they will both ring very little). I hope this is right, because I feel pretty comfortable with this.If so, then I'd say the PiAligned cabinet will ring about the same as a Qtc=0.707 cabinet. But the PiAligned one is better in that it has reduced excursion and therefore distortion too. Or something like this anyway... the sealed one could of course be used lower because excursion doesn't shoot up below resonance like it does on a vented system, although I guess not really because the rolloff means its the extra bass is just too much attenuated, and using it here also means distortion is higher.Would it distort more too if the sealed is used below cutoff and EQ'ed up to make it flat? And if the ported one was wanted to make lower bass, then we could alter the box size/tuning to make it produce the same sort of flat/slighlty overdamped curve, just with a lower -3db point. Using a vented with lower -3db point lowers excursion more than sealed with higher -3db that is used under resonance for the extra bass. So we can achieve the same results in terms of overring with vented as we can sealed, but vented has lower distortion and we can make it go deeper too with less distortion and still better overring than a sealed made to go deep. Phase shifts in the passband are still too minor, the ringing at resonance is the problem. And the signal does not have to be very near resonance for it to be excited (although it does say this in the Acoustic Suspension vs Bass Reflex post) but either way, doesn't matter. Vented all the way! I hope I've gotten this right this time!Thanks!Adrian