Subject: Re: Just so I got this right ...
Posted by Wayne Parham on Tue, 12 Sep 2006 19:32:02 GMT
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In this case what I mean by "HF" is frequencies higher than the fundamentals. Looking back at it, I don't think "HF" was really the proper term since I'm talking lower midrange. But what I meant was the front chamber and folds attenuate signals that are above the passband. So, for example, a bandpass box or a folded basshorn tuned for 30Hz to 100Hz will actually attenuate signals above that range. So second and third harmonics (and all others above that) are reduced.Without this kind of acoustic filter, whatever harmonics are generated by the speaker will be heard. Even if you low-pass electronically, the harmonics generated by the speaker are still there. But the acoustic low-pass filter formed by the folds of a basshorn or the front chamber of a bandpass box attenuate them.When also using push-pull drive, you have another level of distortion reduction. The main feature of the push-pull drive is that it cancels even harmonics. So the second harmonic is greatly reduced. That's the one of lowest frequency, closest to the passband. The next one up is the third harmonic, which is not reduced by the push-pull drive, but is 3x the frequency of the fundamentals and on the edge (or completely outside) of the passband. By the fourth harmonic, push-pull cancellation plus the depth out of band ensures practically no distortion is heard. The combination of the push-pull drive and attenuation of out-of-band harmonics make distortion very low.