
Subject: Re: Cool.

Posted by [Adrian Mack](#) on Sun, 14 Sep 2003 05:45:30 GMT

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Hey Wayne, Great. LAB12 is pretty cool ey, except it uses Kapton instead of aluminium or black aluminium voice coil former, kapton is supposed to heat quicker and handle less power which isn't good. I think they could have used it, apparantly its not much cost difference, it would be especially good for that "high powered labhorn". I was reading one of your older posts made in 2001 today on the high efficiency forum where you described basically what this thread is about. The post is called "Tune the cabinet as appropriate for the woofer" and it talks about Davies and your implementations etc, and more importantly, why resonance behaviour is better controlled in a vented cab and its better transient performance than the sealed. You said The motor is a tuned resonant system, and stronger motors are more controlled at resonance, but they still lose motor control at resonance. "Sloppy" motors lose nearly all control at resonance, and can be quite loud at frequencies near resonance, but completely uncontrolled.. I agree too, at FS, the motor is more uncontrolled. Then you say In a sealed box - we have damping, but we have no acoustic impedance rise at the woofers resonant frequency. . What I thought is, in free air, all woofers have rise/peak in impedance at its fs. In a sealed box, isn't this shifted upward to the box resonance point? Because thats where the impedance peak shows up on the box modelling programs, the peak is shifted to the sealed box resonance. I thought that in the box, resonance overring is at box resonance, and not woofer fs, and in a sealed system woofer resonance is usually about 10db down from the passband on a $q_{tc}=0.707$ system, so would that not mean its more important for impedance rise to be at box resonance and not woofer resonance? (or maybe the sealed box shifts woofer resonance up to box resonance which could be why I dont understand this, I'm not sure). And lastly, you state And in a bass reflex system, the acoustic impedance of the enclosure becomes very high at the Helmholtz resonant frequency, which serves to limit cone movement. What I've thought is the vented box creates two impedance peaks, and the Helmholtz (F_b) is at the trough of this, or the lowest point between the two impedance peaks. But you say its the opposite? You do say acoustical impedance though, I think that might be different from electrical impedance which I'm talking about. I have never heard of acoustical impedance before though or what it does except that you can graph it in Hornresp :P Can you please explain the difference to me? BTW: It said in the sealed box, theres no impedance rise at woofer resonance. But for the vented box you said it is (so its better damped, lower cone movement/ringing), but you said the acoustical impedance rise is at Helmholtz resonance. Helmholtz is not always at woofer fs... can you please explain to me what this meant? I think computer programs should simulate acoustical impedance then if its important to damping, but I guess its not absolutely needed that we see it because we can see damping from the FR. Thanks!Adrian