Subject: Crossover stuff
Posted by Adrian Mack on Sat, 18 Oct 2003 23:41:57 GMT
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Hey Wayne,It seems that the stuff that modifies the reactive load needs to go after the crossover, but stuff that doesn't, such as an attenuation circuit can go in any position. So as an example, if we had adjacent 2nd order networks with zobel and attenuation circuit, then the zobel must be after the 2nd order network because it modifies reactive impedance (hence load on crossover), but the attenuation circuit can go before or after the crossover because it just adjusts the output level of the woofer but doesn't change impedance. Obviously in this case though the attenuation would go after the xover so that it only attenuations one driver and not both. So both would be best after that adjacent 2nd order network's, I assume the order of the zobel and attenuation does not matter though?For any other circuit that shapes the reactive impedance of the driver (like the horrid series notch filter) does the same rule apply? (ie: only make the changes to Re and Le in the formulas and nothing else). I think its kind of like when people connect two subwoofers to a mono amplifier. They wire them in series or parallel but they dont need to redesign the box because no T/S parameters change. But DVC drivers, in series it doubles the coil length so BL is doubled, and Re is doubled because of series wiring. Thats with DVC driver. On two seperate drivers does the same thing apply? Or not?Wiring drivers in series/parallel changes Re, and Qes is dependant on Re, so doesn't Qts change too. How come people then can wire two subs to an amp without redesigning the box because of the changed Qes/Qts?The formula I was referring to about that series notch filter is exactly the same as the one on http://www.loudspeakers101.com/ResEqual.htm. It shows how to get rid of the free air resonance-impedance-peak of the driver. I was thinking this is good for those closed back midranges where the box doesn't change the impedance of the woofer, but cant be used where the box does change reactive impedance (like on a subwoofer if anyone was dumb enough to use passive components on this!). Parameter shifting is still a problem though. I typically find that breaking in drivers sounds better than when they arn't broken in. I think its just loosening up the suspension system that does this. Maybe its magic! It took me awhile to break in my 18LW1400 subwoofer. Lastly, arn't the impedance peaks important to how the speaker works. Like.. I know why they are there. But doesn't the reactive impedance reflect/shape the frequency response curve by changing power distribution throughout the passband (by making the amp see different impedance and hence give out different power). So wouldn't damping the resonance impedance peaks (or the rising impedance by Le) change the shape of the frequency response curve? I know you need them to make the passive crossover work properly, but it still bothers me. Thanks!Adrian