Subject: Re: Can a notch filter improve phase lag?
Posted by Martin on Thu, 01 Apr 2004 11:17:22 GMT
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The phase shifts from the BR enclosure will be extreme near the tuning frequency, least say 50 Hz. By the time you get to the baffle step center frequency, probably near 400 Hz or higher, the box is no longer an issue.In the frequency range where the baffle step occurs there is a smaller phase shift due to the summation of the "sources" along the edge of the box combining with the driver's reponse. For my Lowther DX3 ML TL enclosure this amounted to about 30 degrees maximum. If you apply a Zobel across the driver, the combination behaves as a pure resistor. Then placing a BSC circuit in series the baffle step is corrected including the phase. The BSC circuit has the opposite phase shift whne compared to the baffle step response. Above the baffle step region the BSC circuit acts as a pure resistor so you have a simple voltage division with the driver/Zobel to pad down the SPL magnitude. There is no impact on the phase.This is how the circuit worked for my Lowther DX3 ML TL design. I measured the response and plotted the SPL and phase (after subtracting out the time of flight phase shift). The phase response was improved with the BSC circuit in place! I verified this with some calculations in MathCad. This is just one data point but I think it is accurate for most situations, I am sure somebody could dream up a situation where this was not the case. They probably reside over at AA. The purists at AA have completely closed minds and very little technical understanding beyond the rhetoric. Our frined TC is a prime example.Hope that helps,Martin