Subject: Long term test results for BSC circuit.
Posted by akhilesh on Sun, 29 Feb 2004 15:03:32 GMT
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Well, i have lived with the BSC circuit for a week now. I decided to settle for something that makes only a little difference (very subtle) to my hgh Q speakers: values: 2.2 MH and 2.5 ohms. Before: Lots of midrange, not enough bottom, left unsatisfied, wanted sub woofers to make up for it.Now: Very satisfying bottom, still enough midrange but not glaringly so, all instruments and voices have very satisfying bass, don't need a subwoofer anymore. I think detail has actually been enhanced, since everything sounds more NATURAL now. When i was driving my single drivers in "PURE" mord, meaning one driver, no electronics... it was a toy. my main speakers were my klipschorns. Now, with the supertweeter crossed at about 15 KhZ, and the BSC circuit, I am So satisfed with the single driver speakers, that i listen to them more than my klipschorns...they are more balanced and image a lot better. I still LOVe my khorns though. In summary, I would STRONGLY recommend the BSC to anyone working with even a high Q driver. For low Q drivers....even more indispensable.My very profound thanks to Martin for his patience, and his sharing of his ideas with us. It taught me a lot, and saved me the whole subwoofer project. Martin, if we ever meet, lunch is on me!Hope this post helps others make up their minds about the BSC circuit. -akhilesh

Subject: Re: Long term test results for BSC circuit.
Posted by Wayne Parham on Sun, 29 Feb 2004 23:15:47 GMT
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I think I would have to agree with Akhilesh on an academic level as well as on a subjective level. I've both heard and measured his single driver speakers and while I can certainly respect the minimalist philosophy, some speakers are more suited to that approach than others. I've heard implementations of the Fostex 206e that were pleasant without compensation, but I think many single driver speakers would benefit from compensation components in the circuit.Akhilesh's Trusonic drivers enter a mode where cone flex resonance greatly increases output in the vocal range, just below the overtone region. I'm sure the cone has entered breakup an octave or two below this point, but it is in the upper fundamentals of the vocal range where output really jumps. So the addition of a simple circuit that reduces energy in this region makes the system more pure. Augmentation of the top octave for his speaker is welcome too, which in his case, is accomplished by the addition of a tweeter. The main driver's response is too rolled-off in the top octave to effectively augment with bypass capacitance in the compensation circuit.I'm not sure I would characterize this sort of compensation as being purely baffle correction circuitry, although in some cases, it might be. But I think that often times it is more general response shaping, removing energy in breakup mode regions, adding it back where response has fallen off, etc. However you characterize it, I think that in some cases, the use of a simple and subtle low-Q low-pass filter, sometimes bypassed with capacitance for top-octave augmentation, is an attractive option for some single-driver speaker implementations.As I've seen Martin suggest, selection of these components is a non-trivial task. Don't just grab parts that you have lying around to "test the idea" because if the response shaping is wrong, you'll make the situation

worse. And since the amplifier's output is part of the circuit, you have to take that into consideration too. A semiconductor amp probably has output impedance well less than an ohm, but a tube amp may have several ohms in the output circuit. So it is very important that compensation components be chosen carefully, that their effect is subtle.

Subject: Re: Long term test results for BSC circuit.
Posted by akhilesh on Mon, 01 Mar 2004 13:58:56 GMT
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I agree wayne, at the frequencies I am tailoring it at, it is not a BSC circuit anymore, more a response shaper. Result is very pleasant. AS "live" as my Khorns, except the bass is only down to about 50-55 HZ, whereas the K horns do gove bass to about 35-40 HZ. But the imaging of the single drivers is superior, and in a small room (like mine) they are nice!-akhilesh

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