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Subject: Initial Results of BSC testing + philosophy of single driver speakers

Posted by [akhilesh](#) on Sun, 22 Feb 2004 15:33:30 GMT

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Have been tweaking the BSC circuit for 2-3 days now. I started with the 3.5Mh choke, but the 2.3 mH sounds better. different resistors have been tried. Since the amp I am using (a DIY K502 tube kit from s5electronics) has very little bass at 16 ohms, I have an 8 ohm in parallel with my speakers. This reduces the overall impedance of my speakers. This means i am getting the BSC resistor value totally by ear. Last night I ran it with a 6 ohm resistor in the BSC, and even my wife (who utterly dislikes my hobby) commented that the speakers sounded dead and boomy. So then I reduced the R to 3 ohms, and that of course brought the midrange to life. 2 ohms made it too light. i think I'll settle at 2.5 ohms or leave it at 3. I also have a supertweeter crossing at around 15,000 cycles 6 db crossover. Overall, the sound is now very balanced. I am losing a bit of the midrange detail at the extreme, but the overall balance is much more pleasing to the ear. I thought about the philosophical debate, and it seems there are several views: a) one driver, no electronics, no doctoring of driver. While this is the purist view, I think you are restricted to VERY few drivers, and NO box, since ALL boxes doctor the driver. In fact, only open baffle folk really fit in here. I have never heard of a driver that will give satisfying open baffle performance across the spectrum. People in this camp usually use subwoofers and or tweeters, and may need to replace drivers more often, since open baffle means large movements of the driver. b) one driver for most of the frequency range (say 60 HZ till 11-12 KCPS), with sub woofer and/or supertweeter, but no electronics in the middle driver. ONLY box effects on the middle driver. c) one driver for most of the frequency range, as before, but doctor the response of that driver by de-emphasizing the brighter areas using electronics. I thought I was in camp b), but I realized that camp b) and camp c) are actually the same. The minute we design a box for a speaker, even a sealed box, we are playing with the reponse curve of the driver...we are over emphasizing the bass. A BR or horn only makes the emphasis stronger. A horn will also alter the phase of the bass, and so will a bass reflex to some extent. Heck, even a sealed box will alter the response of the driver. So, if we are playing with the drivers response with the box, then why not use electronics as well? Wayne mentioned something similar in a post, and clearly Martin thinks so too. So my new definition of the purist philosophy is: a driver that is used to reproduce most of the frequency spectrum from say 60HZ to say 12 KCPS. Period. Do anything you want to the drive to get the best response. Dope it (like Ed Schilling apparently does), bass reflex it, horn it, BSC it, do whatever. With this new definition satisfying me philosophically, I am probably going to tweak the BSC circuit some more, and then leave it in. I plan to test as follows: live with the best values I find for a week or so, then short the circuit out, and hear it. I will report back wth the results, though I suspect it will sound too bright without the BSC circuit. I agree with MARTin & Phil that over emphasis of the mid range ,while startling, is sometimes too unbalanced and unrealistic. So Martin, move over a little will ya, we need some space on that limb. -akhilesh