

---

Subject: Re: Nice Link on why SS may not work well with single driver

Posted by [Martin](#) on Thu, 05 Aug 2004 01:18:34 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

akhilesh, Two quotes from the article, I hope they don't mind my lifting the text directly. Quote 1 : "His whole optimization scheme for the single-driver speaker/amp interface hinges on external compensation networks which are specific to each loudspeaker. Indeed, what speaker would I be using? Terry Cain of Cain & Cain and Louis Chochos of Omega Loudspeakers to the rescue. To enable Nelson to include optimized networks with the review amp, Terry Cain personally delivered a pair of Abbys to Nelson's California digs while Louis shipped his pair instead. Using on-site acoustical measurements of either speaker's frequency response allowed Nelson to tailor the compensation networks in conjunction with his F-1 amplifier and the actual speakers." Sounds just like what I have been doing for several years. Maybe Mr. Pass's circuit is implemented differently, probably a lot more elegantly than mine, but I bet the concept and results are very similar. Quote 2 : "Tube amplifiers seem to bring out the best from such drivers. They have more bottom end, a warmer mellower mid- and upper mid-range and often more top octave. By comparison, the 'best' solid-state amplifiers make them sound more like transistor radios - less bottom end and an occasionally strident upper midrange. If you are a solid-state kind of guy like me, you start wondering how that could be. If you are a tube aficionado, you smirk and say, "I told you so." The solid-state guy probably starts fixing the response with a parametric equalizer and the tube guy enjoys his music with a nice glass of wine." This is the damping factor impact that I have also been talking about for a couple of years. A low damping factor tube amp will work with a low Qts Fostex or Lowther drivers without much compensation beyond the cable and connection resistances. The Abby is a good example. The tube amp can have several ohms of internal series resistance. The high damping factor SS amp will probably sound terrible with the an uncompensated Fostex or Lowther driver (I know this for a fact). The Abby will not sound its best with a SS amp. Add a compensation circuit to the Fostex or Lowther driver and the SS amp will sound great and the tube amp will sound booming and underdamped. No magic here. I personally believe the damping factor issue is the major source of the differences reported in the tube and SS amps. The odd or even distortion stuff is much less of an impact. The warmth and bass output generally associated with a tube amp is due to the internal series resistance not present in SS amps. Low Qts big magnet full range drivers will sound better with a tube amp if no compensation circuit is used. Conclusion : You need to design the speakers for the type of amp being used. I think both a tube amp and a SS amp can work well with Fostex or Lowther drivers. But you cannot design a single speaker that works well with both without some form of compensation or adjustment. Does that make any sense? Martin

---