Subject: impedance curve
Posted by Wayne-o on Thu, 10 Jul 2008 20:54:27 GMT
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To Wayne P. Does a lower impedance spike in the bass region translate into a more accurate sound reproduction as some woofers are peaked at 25 ohms and others are above 75 but still have about the same curve using Boxplot ???

Subject: Loudspeaker impedance curve - Zmax and tube amps
Posted by Wayne Parham on Thu, 10 Jul 2008 22:40:18 GMT
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If the amplifier has high damping factor (low output impedance), the impedance curve won't matter much. But amps with higher output impedance will interact with the load impedance and may cause some amplitude response fluctuation. Single-ended tube amps with no feedback usually have a few ohms output impedance, so the speaker's impedance curve is important.

The reason for the fluctuation is the source impedance and the load impedance form a voltage divider, and if the source is nearly zero then the signal is developed almost entirely on the load, even when impedance fluctuates. But in the case where the source impedance is higher, less of the signal is applied across the load when load impedance dips, and since the dips are usually closer to average impedance than the peaks, this makes the peaks seem more pronounced.

Add to that, the source impedance, cables and any crossover coil resistance are all in series with the woofer's voice coil, making it act like it has higher Re and Qes. This pushes the speaker towards an underdamped condition, which tends to increase bass output near resonance.

is a 0.92dB difference. That's still not bad - less than 1dB - but you can clearly see the increase of fluctuation in the transfer function.

eaither, really. Pretty common for a SET amp. But once you go much past that, the fluctuations

same amp. The increased series impedance shifts the speaker circuit Q too, so it may sound muddy as a result.

Subject: Re: Loudspeaker impedance curve - Zmax and tube amps
Posted by Wayne-o on Fri, 11 Jul 2008 06:16:01 GMT
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Thanks for the reply , Its good to hear a no nonsense explanation. And its nice to know that using speaker wire a inch thick is not going to make up for bad damping in the speaker or amp.