
Subject: Re: Effect of Length

Posted by [Keith Larson](#) on Mon, 02 Aug 2010 03:57:53 GMT

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Hm, maybe it would help to consider a hypothetical but not too unrealistic case?

As an example consider a speaker (or combination of speakers) whose impedance is nominally 8 ohms, with a 64 ohm peak in the bass, yet falls to 4 ohms at 20 kHz. Now suppose you are using a long (or crappy) cable with an $R=1$ ohms and $8\mu\text{H}$ inductance. The nominal loss would be $20 \cdot \log(8/(8+1)) = -1\text{dB}$ and the bass peak would be -0.134dB . However, at 20 kHz the cables total impedance is now $1+1j$ ohms (1.414 angle 45°). In this case the -2.6dB . The total variation is 2.5dB , so a better cable might help, but from a simplistic view this is really not much more than a tone control. On the other hand, Wayne's point about damping comes to mind.

Incidentally when something sounds bad, what I usually find to be most problematic are bad connections, oxidation and corrosion. Basically this is loose screws, oxidized wire and incompatible metal contacts.
