
Subject: A measurement question?

Posted by [wunhuanglo](#) on Fri, 20 Aug 2004 10:25:27 GMT

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

Is running a fixed frequency through a loudspeaker and measuring amplitudes (or relative amplitudes) at the harmonic intervals an appropriate way to assess speaker performance? Specifically, I'm wondering if I can appropriately assess the second harmonic "distortion" of a dipole by feeding the speaker say 50 Hz at 80 dB and measuring the level at 100 Hz? Is it that simple?

Subject: Harmonic distortion

Posted by [Ralph](#) on Fri, 20 Aug 2004 19:32:27 GMT

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

That is exactly how harmonic distortion is measured. Use a pure sine at one frequency and measure the output at that frequency and multiples.

Subject: Re: Harmonic distortion Thanks! A follow-up, please?

Posted by [wunhuanglo](#) on Fri, 20 Aug 2004 22:39:10 GMT

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

IF, in the example I used, The 50Hz fundamental was 100dB, and the first harmonic at 100Hz was 25dB, it would be expressed as 25% harmonic distortion? TIA

Subject: Re: Harmonic distortion Thanks! A follow-up, please?

Posted by [Mike.e](#) on Sat, 21 Aug 2004 05:51:09 GMT

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

Check in your local library for audio technical books. I had one with a picture of the B&W Re % and db, no because db are log scale. "Distortion is higher at 20 Hz than at 30 Hz even though the displacement is the same. This is a curious result. The fundamental drops $40\log(30/20) = 7$ dB, as expected. The 2nd and 3rd harmonics, though, remain at nearly the same sound level, as the voice coil swings through the same range for each of the excursion dependent non-linear parameters. Thus the distortion percentage increases"-I don't think so-
Linkwitz lab

Subject: addition

Posted by [Mike.e](#) on Sat, 21 Aug 2004 05:57:04 GMT

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

I got carried away and forgot to mention that both Speaker Workshop and a german program(HOBBYBOX4) measures distortion very easily i heard.(demo version of mlssa perhaps also/

Subject: Thanks, mike

Posted by [wunhuanglo](#) on Sat, 21 Aug 2004 11:34:09 GMT

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

I probably would have remembered about the log relationship somewhere in the 22nd century; thanks for the reminder.I had downloaded a copy of Speaker Workshop some time ago but never got around to exploring it. Guess I will now.Thanks again.
