
Subject: Ping Wayne

Posted by [Mark91845](#) on Thu, 11 Apr 2013 01:19:16 GMT

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Hello Wayne. It's been a long time and I hope you are well. Being a speaker designer, I was wondering what you knew about how we hear at different volumes. I read about a study done years ago about how the ear hears frequencies on a curve depending on volume. I am guessing this was the reason for the design of a loudness circuit on some equipment.

Mark

Subject: Re: Ping Wayne

Posted by [Wayne Parham](#) on Thu, 11 Apr 2013 13:38:36 GMT

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Yes, that's the Fletcher-Munson curves, sometimes also called equal loudness curves. These are the result of studies made at Bell Labs in the 1930s by Fletcher and Munson. They asked people to judge when pure tones of two different frequencies were the same loudness, and plotted the resulting charts.

File Attachments

1) [Fletcher_Munson.gif](#), downloaded 3167 times

Subject: Re: Ping Wayne

Posted by [Mark91845](#) on Thu, 11 Apr 2013 14:09:49 GMT

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Im not sure if this will make any sense, but if this is the case, frequency plots are basicly out the window depending on the volume you listen at ?

Is this just a good case for a "loudness circuit" or eq ?

Subject: Re: Ping Wayne

Posted by [Wayne Parham](#) on Thu, 11 Apr 2013 15:20:53 GMT

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That's exactly what a loudness circuit does. When you press the "loudness" button on a sound system, it implements EQ based on the Fletcher-Munson curves.

Subject: Re: Ping Wayne

Posted by [Mark91845](#) on Thu, 11 Apr 2013 15:41:22 GMT

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Cool thanks for the help.
