Subject: Re: Energy along frequency spectrum
Posted by Bill Fitzmaurice on Fri, 28 May 2004 10:35:10 GMT
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Another way to look at this question is vis a vis excursion; for equal power output excursion increases at 6dB (factor of 4) per halving of octave, so it takes roughly 4 times the power at 1kHz than at 2kHz for equal output. Similarly, pink noise, which reasonably duplicates audio program material, decreases in power at a 6dB/octave rate as frequency rises. Power requirements tend to level out below 80 Hz and above 8kHz, as natural signal sources (instruments) also level out in power requirements at the ends of the spectrum, though artificial sound sources (electronic instruments) can have higher first and last octave content. Generally speaking a rule of thumb is that 75% of power requirement is in the band up to 500 Hz, 20% from 500 to 5kHz, and 5% from 5kHz on up for music program.