Subject: Wanna try "click tests" too?
Posted by Wayne_Parham on Mon, 09 Apr 2001 04:15:27 GMT
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A DC transition can be used to excite a speaker at resonance. Since the quick application of DC makes what is essentially a very low frequency square wave, it will have harmonics, some of which are near the resonant frequency of any loudspeaker.I'd love to see you check this one out, and to post your results. Compared with the rest of your work, this will be incredibly easy. All you need is a debounced switch - something that can give you a "clean break." Then apply about 5 or 10 volts DC to your loudspeaker. You will measure the signal that results.Set gain on your scope way up there to measure a very small signal. And have its rate set to show about four cycles at 40 or 50 Hz - pretty slow. What we're trying to capture here is the overring at resonance, set up by the tiny amount of energy of the square leading edge of the DC transition. The small components of harmonics in the resonant frequency bandwidth will excite the system, and you will see a tiny overring.With gain set so high, the initial transient pulse delivered mainly by the tweeter will go way off scale. I'm not interested in this event. What I'm interested in is how much you are able to excite the system at the motor cabinet's resonant frequency. It will be a small and quickly decaying sine wave at the motor cabinet's resonant frequency. In fact, depending on the woofer, it is likely to not be a complete cycle, and only a half cycle or even a partial.So if you're interested to do this during your measurements, I'd love to see you post your results.