Subject: Re: How do you test speaker spl?
Posted by Wayne Parham on Sun, 28 Oct 2001 07:22:55 GMT
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Assuming your speaker is approximately an 8 ohm load, it is true that you should look for 2.83vrms. But if the speaker is 4 ohms, then set it for 2vrms. That will give you the 1W/1M value.

Something to remember is the speaker is never a pure resistance and rarely averages a multiple of 4 or 8 ohms. It is usually something like 6.8 ohms. So rather than calculate the voltage required to dissipate 1W at a certain impedance, it might be easier to make voltage the standard rather than power. In other words, instead of finding SPL at 1W/1M, you might consider finding SPL at 2.83v/1M. That takes impedance out of the equation and may be more useful to you, since voltage sensitivity is what has to be matched between subsystems anyway.Your amplifier will deliver the same voltage across the speaker terminals regardless of impedance, so voltage sensitivity is what you really care about when designing a crossover. The internal impedance of the amp and the resistance of the wires causes a slight voltage drop, and this drop increases as load impedance decreases, but this is usually small enough to be negligible. When you connect an 8 ohm driver and a 16 ohm driver in the same circuit, the 8 ohm driver will receive twice the power as the 16 ohm driver because the input signal applied across each driver is the same, but the impedance is different. This has an affect of making the low impedance driver louder. That's why you sometimes hear people talking about voltage sensitivity, qualifying the fact that the number expressed is related to voltage input, not power.