Subject: A Note about Measurements
Posted by Wayne Parham on Tue, 02 Sep 2003 18:52:37 GMT
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One should be aware that there is some ambiguity involved when using uncalibrated instruments. This is much less a problem when doing simple T/S measurements, because they are really limited to the electrical domain. There is some reflection of the mechanical parameters back through, and in fact, it is that which makes T/S measurements possible. But since the acoustic domain isn't measured, this is a whole level of setup complexity and accuracy that isn't required for the measurements to be reliable. Good electrical equipment is all that's required, and no calibrated microphones or acoustical measuring systems are needed.Still, the point I wanted to make is that handheld DVM's are really not particularly accurate. So much of the time, what is available to the do-it-yourself builder is not really very precise, and the results obtained are then somewhat ambiguous. These are good for ball-park readings, but one would be well-advised to consider the possibility of error.This fall, I'm planning to do an exercise where I'll measure the T/S parameters of speakers with the sealed box and added-mass methods and using various instruments. The idea is to compile a chart of values for comparison using oscilloscopes and DVM's of various qualities. So this should be an interesting exercise and will help to quantify the ambiguity of budget measurements.