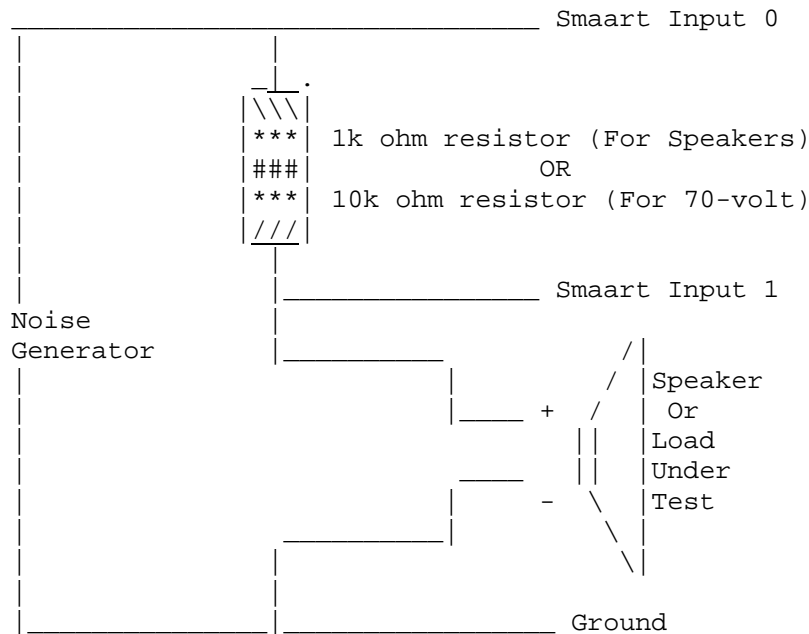


Simple Circuit For Viewing Impedance with Smaart

Dr. Don October 2000



The 1k resistor makes the generator appear as a constant current source to the driver. The analyzer calculates transfer function by dividing the spectrum of channel 1 by the spectrum of channel 0.

You probably should use a small power amplifier between the noise source and this circuit, since your computer's output stage may not want to drive this low an impedance.

To calibrate, connect a 1% 10ohm resistor (or some other value as required by your measurement application) across the device under test connection and store it in one of the Smaart memories.

If you need further information I'd suggest

L.L. Beranek "Acoustics" McGraw Hill, New York, 1954

J.R. Ashley & M.D. Swan "Experimental Determination of low frequency Loudspeaker Parameters" presented at the 37th AES convention New York, NY October 13, 1969

R.H. Small "Direct Radiator Loudspeaker System Analysis" IEEE Trans, Audio & Electro-Acoustics, Vol AU-19 (DEC 1971)

R.H. Small "Closed Box Loudspeaker System Analysis" Journal AES Vol 10 (DEC 1972)

Christopher Struck, Bruel and Kjaer application note "Determination of the Theile-Small Parameters Using Two-Channel FFT analysis" based on a paper presented at the 82nd AES convention, London, England. March 11, 1987

Bob Metzler, Audio Precision, Application Note #3, Page 14, 1989