Subject: Re: How do impedance switches work?
Posted by Wayne Parham on Tue, 08 Nov 2005 19:28:12 GMT
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The URL you provided shows an attenuator, with what is probably an additional fixed resistance to set the load. To create a higher impedance load, one can simply add series resistance to the speaker circuit, perhaps with some amount of damping resistance or conjugate across the driver to help prevent resonant peaking. But really, I think the impedance switch is a bad idea brought forth by a marketing department, so they may not have cared to use any sort of damper to reduce response anomalies. I think what they're basically doing is using speakers with 8 ohm voice coils, and optionally switching in 8 ohms series resistance to make a 16 ohm circuit.The attenuator is an L-Pad, which has series and parallel resistance elements. The switch probably sets a fixed resistor, which is used as part of a voltage divider. The other part of the divider is a variable resistor. Since speakers are a reactive load, resistance does more than just attenuate, it also acts something as a tone control. But I think that's all way beyond the scope of this discussion. The bottom line is that the switch is just selecting the amount of resistance used in the circuit.