Subject: How do impedance switches work?
Posted by raintalk on Mon, 07 Nov 2005 23:06:58 GMT
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http://www.kustom.com/products/pa/s...e_impedance.asphttp://news.harmony-central.com/New...AccuSwitch.htmlI could see how a 4 or 16 ohmor 8 or 32 ohmswitch could work, but how do switches that just double or half the impedance work?

Subject: Re: How do impedance switches work?
Posted by Wayne Parham on Tue, 08 Nov 2005 14:51:05 GMT
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The web pages at your links didn't work for me. But there are several ways to shift impedance, most just simple series or parallel resistance.

Subject: Re: How do impedance switches work?
Posted by raintalk on Tue, 08 Nov 2005 17:27:08 GMT
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Sorry - I don't know how to make links work here. One is the Kustom MLI monitor speaker.It has an impedance switch to select 8 or 16 ohms.http://www.kustom.com/products/pa/switchable_impedance.aspThe other is the Accugroove bass cabinet - it has a switch to select either 4 or 8 ohms. (But I found a thread on talkbass and apparently the switch doesn't measure up to its claims.)My confusion is how a switch could select just double the impedance. For example: 4-or-8ohms, or 8-or-16 ohms. I can't see how you can series/parallel to get such combinations.It'd sure be handy if such a switch were possible.

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.

Subject: Re: How do impedance switches work?
Posted by raintalk on Tue, 08 Nov 2005 21:11:56 GMT
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OK thanks. So nothing fancy with a dual VC. Adding a resistance would sure effect overall SPL with but for stage monitors this might be acceptable if one was trying to control volume on one part of a stage.Here's the link to the other switch.http://news.harmony-central.com/News/2003/AccuSwitch.htmlYou have to go to the accugroove site to find out more about it.But as I mentioned - folks who actually measured it say it does't work.

Subject: Re: How do impedance switches work?
Posted by Wayne Parham on Tue, 08 Nov 2005 21:44:23 GMT
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I suppose it could have dual voice coils, but I suspect it does not.

Subject: Does AccuSwitch work?
Posted by Bill Fitzmaurice on Sat, 12 Nov 2005 19:18:06 GMT
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It doesn't work, they got busted big time by Bass Player magazine and the TalkBass forum. It switches a capacitor bank, 1000uF or better, in and out of series with one of the drivers. If you measure DCR with an ohm meter the resistance will double with the cap in the circuit, since the cap blocks DC, but above about 17Hz it has no effect on the impedance. The jury is out on whether AccuGroove is guilty of false advertising or really sloppy engineering- or both.

Subject: Re: Does AccuSwitch work?

Posted by Wayne Parham on Sat, 12 Nov 2005 19:42:25 GMT
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Sometimes I don't understand how mistakes like that can be made. These kinds of systems are barely more complicated than a wedge or a wheel, so to screw one up takes a monumental feat of stupidity.