Subject: Socket Splitter Problem
Posted by Lancelot on Thu, 17 Jun 2010 02:41:46 GMT
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I placed a socket splitter for my speaker and headphone to produce sound at the same time. The quality of the sound of the speaker became like the sound of the headphone. How can I make the speaker return to its quality before putting the socket splitter? Please correct me about the right term for the socket splitter.

The reason I placed the splitter is because the socket in front of the computer doesn't work. I have to plug in and out the speaker and the headphone at the back of the computer so I decided to buy a splitter.

Subject: Re: Socket Splitter Problem
Posted by Wayne Parham on Thu, 17 Jun 2010 14:47:21 GMT
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What's the problem, exactly? You said, "The quality of the sound of the speaker became like the sound of the headphone." What do you mean by that?

Subject: Re: Socket Splitter Problem
Posted by candoon on Thu, 17 Jun 2010 18:31:29 GMT
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Have you taken the splitter off by chance to see what that does? I understand the reason for it and I am not sure about the terminology but it might be possible to remove it and find a better way of fixing the original problem (rather than this since it seems to not work).

Subject: Re: Socket Splitter Problem
Posted by Lancelot on Mon, 28 Jun 2010 03:41:44 GMT
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I will try to make a picture of what I did. I bought a splitter like this one.

The sound quality of the desktop speaker is good when I plug the it alone. Then after plugging this device and connecting both the speaker and the headphone, the sound quality of the speaker would become like the sound quality of the headphone.

I bought this device so that I won't be plugging and unplugging the speaker and the headphone all the time.

Subject: Re: Socket Splitter Problem
Posted by Keith Larson on Thu, 08 Jul 2010 02:20:41 GMT
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The line output from your sound card will probably have a resistor (probably 200~470 ohms) in series with the output protecting the output a little bit. Normally an amplifiers input is really high, like 10k-47k ohms, and its flat with respect to frequency. When you hang a speaker or headphone on the output the load impedance is not constant with frequency so you get a goofy tone control. Adding two loads makes things even more interesting.

Subject: Re: Socket Splitter Problem
Posted by Lancelot on Thu, 22 Jul 2010 01:54:32 GMT
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Thanks for the explanation. However, I couldn't figure out how many ohms my sound card have.

Another interesting fact is that the volume of my speaker can be controlled using the volume controller of the headset but it doesn't work the other way around.

Subject: Re: Socket Splitter Problem
Posted by Keith Larson on Thu, 22 Jul 2010 02:29:04 GMT
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This is because the volume control of your headset is probably a simple potentiometer with the (headset) drivers hanging from the wiper. As you move the wiper to the full volume position, the impedance of the drivers in parallel with the potentiometer is seen. If the wiper is at minimum volume, the impedance is only that of the potentiometer.

A more sophisticated way of doing this is to use an L-Pad for the volume control. In this case there are two wipers (two for each side, so there are four for stereo). As one wiper goes up, the other goes down keeping the impedance relatively constant. Or, at least thats how the theory goes. In reality the complex impedance of the driver gets involved.

As you may expect, L-Pads are rare in headphones as the optimal solution is to not have a volume control at all. Most of the time you find L-Pads in midrange and tweeter controls. The idea is the same, to keep the impedance relatively constant (IE an L-pad is better than a simple single potentiometer), because the changing impedance can result in some odd effects in the crossover.

Subject: Re: Socket Splitter Problem
Posted by Lancelot on Mon, 26 Jul 2010 18:17:35 GMT
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To be honest, I'm quite lost about the explanation because of the vocabulary that was used. What I understand, correct me if I'm wrong though, is that the volume controller of the headset acts like an equalizer.

I don't know if the theory is the same but I used a program in college, Cyberlink if I'm not mistaken, and I can control the volume of individual desktop speakers. Is this what's happening with my headset and my speakers?

Subject: Re: Socket Splitter Problem
Posted by Keith Larson on Wed, 28 Jul 2010 02:44:53 GMT
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Yes, an equalizer would be similar if you are adjusting many bands. Otherwise, this would be a crossover or filter circuit. Basically you would see the shape of the speakers impedance curve imprinted on the response.
