
Subject: Passive preamp resistive design?
Posted by [akhilesh](#) on Wed, 16 Jun 2004 14:08:20 GMT
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Hi everyone, Quick question. If I am using a pot with a 1 Kohm resistor in parallel to it, my amp sounds a lot smoother than if I increase the parallel resistor to say 2 Kohms...it then sounds brighter. My source output impedance is 600 ohms, the power amp input is 150 Kohms. My pot is 1 Kohm linear, with a series resistor of say 10 Kohms. My question: Am I killing some portion of the frequency spectrum with a low parallel resistor to the pot? -akhilesh

Subject: Re: Passive preamp resistive design?
Posted by [Wayne Parham](#) on Wed, 16 Jun 2004 14:52:19 GMT
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Hi Akhilesh, You could be loading the preamp output so that frequency response is changed. But it also could be that you are simply limiting the drive signal to the main amp, possibly preventing it from being overdriven. If you want, we can put the scope and generator on it next week and find out which is the case. Wayne

Subject: Re: Passive preamp resistive design?
Posted by [akhilesh](#) on Wed, 16 Jun 2004 15:30:06 GMT
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Hi Wayne, Thank you for your response. The impedance of the passive preamp is going to be less than 1 kohm...say around 700-800 ohms. I wonder if reducing the impedance to around that of the CD source (or maybe even a little less) causes anything. It actually sounds better though (more bass)! Clarity is there, without any harshness. If I increase the impedance, it sounds a little harsh...(more digital I guess)...hmm maybe I just like rolled off...putting the scope & generator on would be excellent...really appreciate your getting it if you can -akhilesh

Subject: Re: Passive preamp resistive design?
Posted by [Wayne Parham](#) on Wed, 16 Jun 2004 16:46:39 GMT
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If the load impedance is less than output impedance, it does generally cause problems. It can cause distortion or frequency response aberrations. The most common symptoms are distortion and loss of bass. But the output impedance of most devices like this is 600 ohms or less, so

you're probably just fine. You can match impedance between the output stage of one amp to the input stage of the next amp to obtain maximum power transfer between stages. Or you can connect a low output impedance of an amp to a high input impedance of the next stage to obtain maximum voltage transfer. Both are acceptable methods, and each will work just fine depending on what you are trying to do. The one thing you don't want to do is to connect an amp with high source impedance to a low impedance load. If the output device characteristics aren't known, it can be checked with a test load resistor using a scope to see how much voltage drop results. Using a test signal at bandwidth extremes, one can also find out where it rolls off and if this frequency changes with different load resistances. A CD player, tape player or turntable require test disk, tape or record to provide the signal. But for a preamp or main amp, a signal generator can be used instead.

Subject: Re: Passive preamp resistive design?
Posted by [akhilesh](#) on Wed, 16 Jun 2004 19:07:25 GMT
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Thanx Wayne. Very helpful indeed. I guess seeing the input and output signals visibly is one way to see if there is distortion. I must admit the 1 k ohm in parallel (meaning close to 600 ohm in total) sounds good to me...but it's a loss in treble I think. -akhileshb
