Subject: Re: Attenuate amp inputs
Posted by Wayne Parham on Tue, 24 May 2005 12:33:03 GMT
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If there is more attenuation in the treble, then there may be interelectrode (or interelement) shunt capacitance to blame. Or perhaps there is some amount of series inductance. In either case, you can use a bypass capacitor on the series resistor to counteract this. You can also use a partially bypassed resistance, by breaking the series value into more than one resistor and bypassing each individually. As an example, if your series value is 430k, maybe you'll use a pair of 220k resistors instead and bypass one of them with a 100pF capacitor.If your amplifier's input impedance is 100k, then putting 47k in shunt will reduce it to 32k. The formula for parallel resistors is:RT = 1 / (1 /R1 + R2...)For two resistors, you can also calculate with this formula:R1 · R2 / R1 + R2At any rate, the total amount would be 32k. That's probably OK, but I might try values that shifted it less. Maybe use a divider that has a shunt value equal to that of your input impedance.Since the shunt resistor is paralelled with the input impedance, that value becomes lower than you might think. So in this case, if you went with a 100k ohm shunt resistor, you'd effectively have 50k input impedance. The series resistance you'd want for 12dB attenuation would be about 150k. So instead of having resistor values of 150k series and 47k shunt, you'd use 150k series and 100k shunt. That would make the circuit function as 150k series value and 50k shunt, providing 12dB attenuation. From the resistor values, it would aoppear to be an 8dB attenuator. But because of input impedance, the attenuation value would be 12dB.