Subject: Re: Attenuate amp inputs
Posted by Wayne Parham on Mon, 23 May 2005 10:26:26 GMT
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Usually you can expect a pair of resistors configured as a voltage divider to work pretty well as an attenuator. You want 10-to-1 for a 20dB divider or 4-to-1 for a 12dB divider. But since the resistors place a load on the output, they can affect its response if it has reactive components in the output, like a coupling capacitor or transformer. You could also overdrive the output. Generally if the load impedance is high, these aren't a concern. Likewise, the input stage could be modified by the shunt resistance of your attenuator, which effecively acts as a partial short circuit. As an example, if you had a 20dB attenuator using 43k series and 4.7k shunt, then the input will have 4.7k ohms across it. If the first component is a 100k potentiometer, you'll be shorting it and the volume control may act weird. The interaction of values on global feedback loops can have unintended consequences too. Usually these kinds of things won't cause problems but sometimes they do.Try this. Try a couple of attenuators, with different impedance levels. Try hooking them up as a series resistor followed by a shunt resistor. Pick one of the two decibel levels and try both attenuators shown. Let me know what you hear.For 12dB:36k series, 12k shunt- or -150k series, 47k shuntFor 20dB:43k series, 4.7k shunt- or -430k series, 47k shunt