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Subject: Parallel Notch Filter Question

Posted by [FredT](#) on Tue, 31 May 2005 14:15:03 GMT

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I was looking at one of the many parallel notch filter designer sites on the internet and I have a question. These sites require you to enter a center frequency (F), a lower frequency where the peak is up 3dB (F1), and the higher frequency where the peak is up 3dB (F2). You enter these numbers and the program computes the required C, R, and L values for a notch filter to tame the peak. For example, a 5khz peak with a 2.5khz F1 value and an 8khz F2 value causes the program to recommend a 6uF cap, a 4.8 ohm resistor, and a 0.15mH inductor. Now for the question: Is this computation done with the assumption that the speaker load is eight ohms or is a notch filter unaffected by the speaker impedance. Would the above notch filter work with a four or sixteen ohm speaker, or would those impedances require different C, R, and L values?

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Subject: Re: Parallel Notch Filter Question

Posted by [Wayne Parham](#) on Tue, 31 May 2005 16:07:25 GMT

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The filter is dependant on source impedance and load, and it should have a voltage dividing component too. If you have a different source or load, you'll need different values. If the circuit has very high impedance, the filter would act as a short at all frequencies. If very low impedance, the filter would act as if it weren't there.

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Subject: Re: Parallel Notch Filter Question

Posted by [Earl Geddes](#) on Mon, 06 Jun 2005 17:24:16 GMT

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All simple filter applications like this assume a very low input impedance and a very high output impedance when compared to the impedances of the circuit,. This is true no matter what type of filter it is. When the input and output do not abide by these rules - which is almost all of the time - then the loads become part of the filter and it must be analyzed in a more complex manner.