

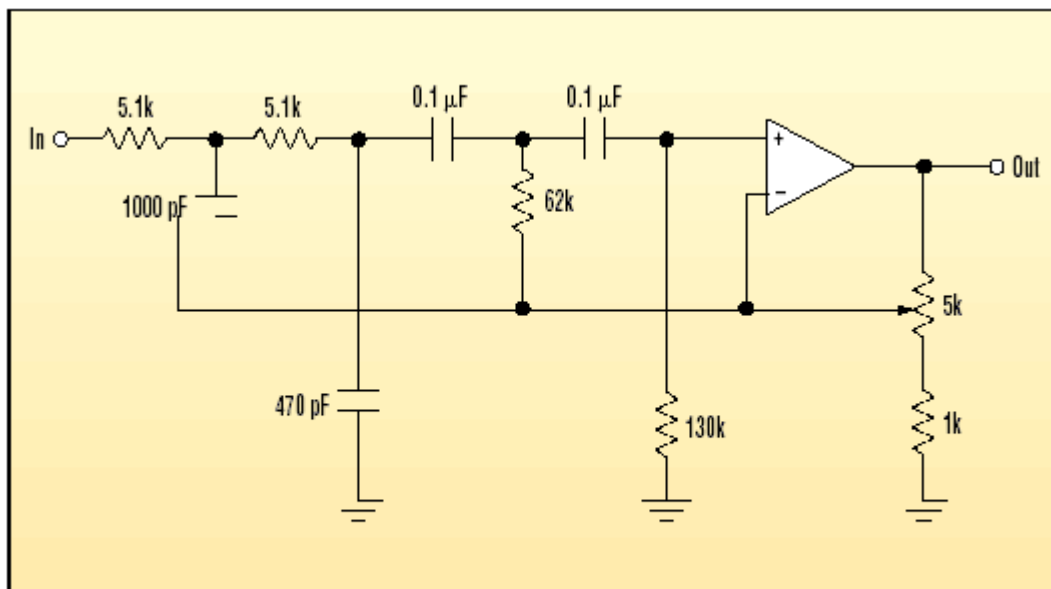
# Variable-Gain Active Band-Pass Filter Uses Only One Op Amp

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Here's an idea you're not likely to find in the op-amp "cookbooks," doubtless due to a worldwide conspiracy to sell more op amps.

A single op-amp section can often "multitask" analog chores. This audio input stage combines low-pass, highpass, and variable-gain functions. Frequency response is within 0.25 dB of flat between 30 Hz and 15 kHz. The gain can be adjusted between unity and +15 dB.

The wiper of the gain control isn't a very low impedance. Therefore, the lowpass and high-pass characteristics don't quite live up to textbook second-order expectations. Nonetheless, the performance of this circuit is sufficient for suppressing subsonic rumbles and reducing RF pickup.



When there is only one op amp available, this active bandpass arrangement can be used instead of standard active filters.