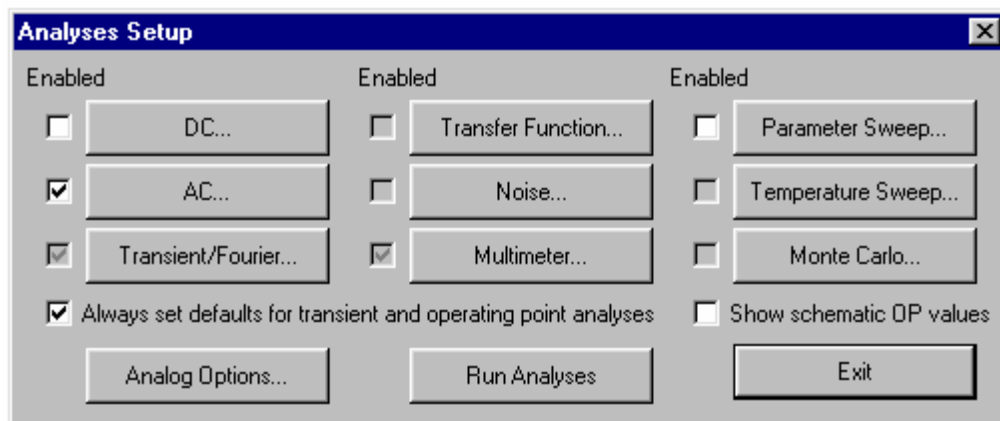


Using Circuitmaker For Filter Analysis

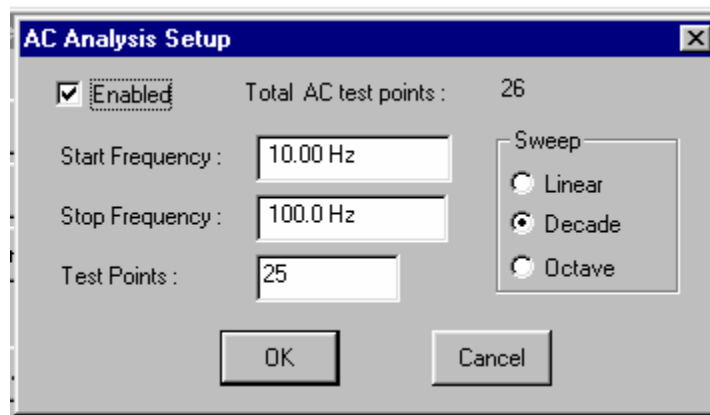
Circuitmaker is a simple but powerful computer-aid circuit analysis tool that can do both transient, frequency response, and bias analysis. The program has a wide selection of device models that include ICs and discrete devices. This procedure will explain how to find the frequency response of filters using Circuitmaker. It will also show how the software can be used to find the ac rms voltage magnitude across circuit components.

Finding Circuit Frequency Response

- 1.) Draw the circuit. Each component must have a designation (R1, C1 etc) and value. Use the signal generator component for the signal source. This component can be found by selecting the **Devices**, menu selection, then select **Browse, Analog, Instruments, Signal Gen.**
- 2.) Under the **Simulation**, menu selection, analog mode should be checked. To set the type of analysis, under **Simulation**, select analyses setup. The screen below should appear. Enable the frequency response calculation by checking the AC enabled check-box.



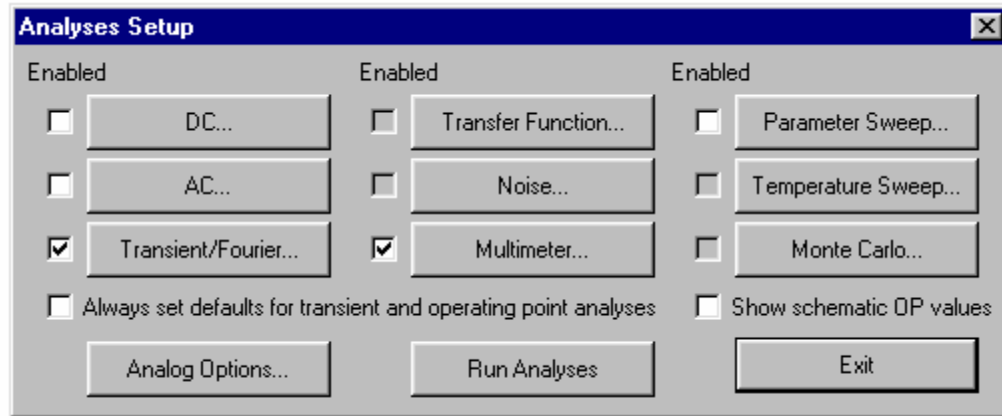
- 3.) Clicking the AC button brings up another screen that allows the frequency range and number of analysis points to be set. Set the desired frequency range and total number of analysis points.



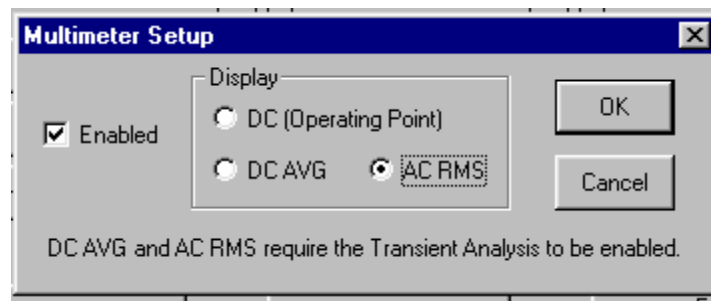
- 4.) Click on the **Run Analysis** button to start the simulation.
- 5.) Use the Probe tool to select the voltage to display on the frequency response plot.

Finding AC Voltage Magnitude

- 1.) Draw the circuit. Each component must have a designation (R1, C1 etc) and value. Use the signal generator component for the signal source. This component can be found by selecting the **Devices**, menu selection, then select **Browse, Analog, Instruments, Signal Gen.**
- 2.) Under the **Simulation**, menu selection, analog mode should be checked. To set the type of analysis, under **Simulation**, select analyses setup. The screen below should appear. disable the **Always set default for transient and operating point analyses** selection. Enable the transient and/Fourier and multimeter selections. The screen should look like the figure below.



- 3.) Click the Multimeter button and select the ac rms analysis. This will bring up an ac voltmeter when the simulation runs. The screen should look like the figure below.



- 4.) Use the probe tool to select the voltage magnitudes to display. Changing the frequency of the source gives the ac voltage magnitude for different frequencies.