

Two ICs make low-cost video-distribution amp

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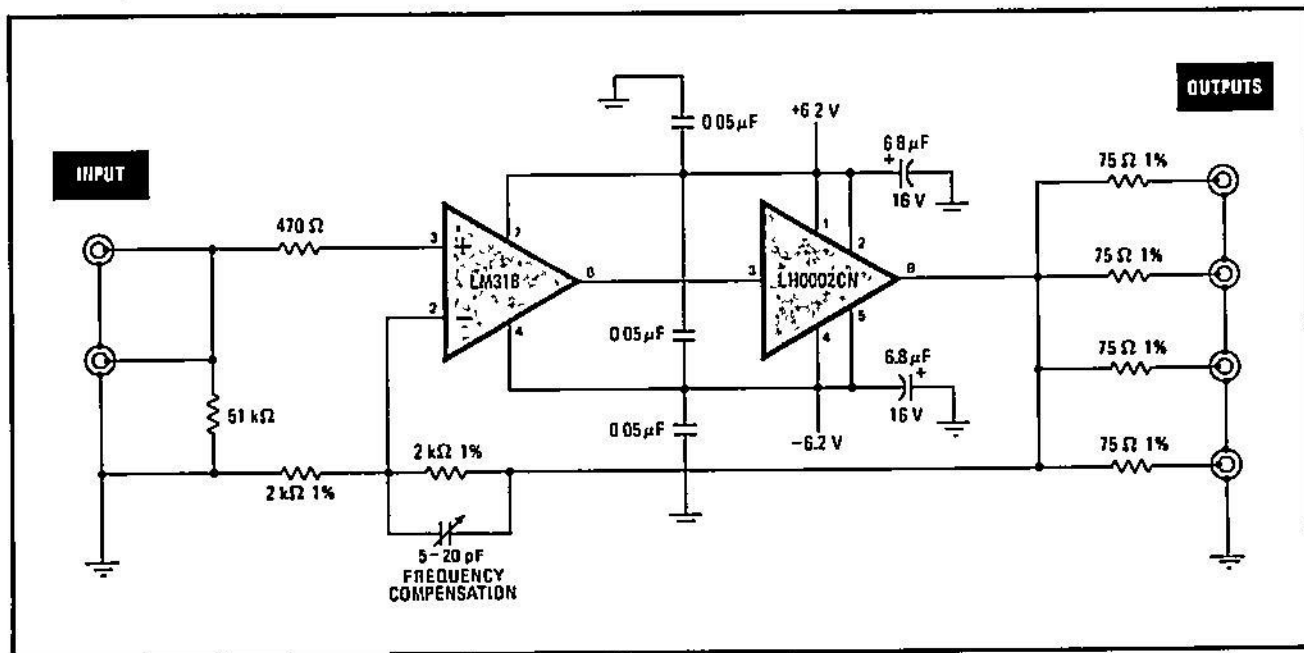
For less than \$25 in parts, a video distribution amplifier can be constructed with all the features of commercial models selling for over \$300. The circuit shown in Fig. 1 takes the 1-volt peak-to-peak output of a standard video signal generator or TV camera and provides four or more independent outputs that each deliver 1-v pk-pk video into 75-ohm loads. Two input connectors are mounted in parallel because the 50-kilohm impedance is high enough to permit "loop-through" connection, in which a second distribution amplifier is paralleled with the first by means of the second connector. If not used

for loop-through, the second connector should be terminated with 75 ohms. The frequency response of the unit is flat from dc to 4 megahertz.

The video distribution amplifier circuit in Fig. 1 uses a National LM318 high-speed operational amplifier and a National LH0002CN current driver in a feedback loop. The resulting output impedance is so low that the output approximates a zero-impedance voltage source, so loads connected to the output resistors have no effect on each other. The 75-ohm output resistors provide the proper drive-source impedance for coaxial cable, short-circuit protection for the LH0002CN, and increased isolation between loads.

The only adjustment required is the frequency-response compensation capacitor. This trimmer is set to provide the same output amplitude with a 1-MHz sine-wave input as is obtained with a 10-kilohertz sine wave input.

The 6.8-microfarad bypass capacitors should be tantalum electrolytics and should be installed close to the



1. Video distribution amplifier. Signal from TV camera or video signal generator is amplified to provide 1 v peak-to-peak at each of four outputs matched to 75-ohm loads. Second input connector can be used for loop-through connection of a second distribution amplifier or for a terminating resistor. Frequency-compensation adjustment balances stray capacitances, providing flat response from dc to 4 MHz.