Quad Video Amp Splits And Buffers An S-Video Signal

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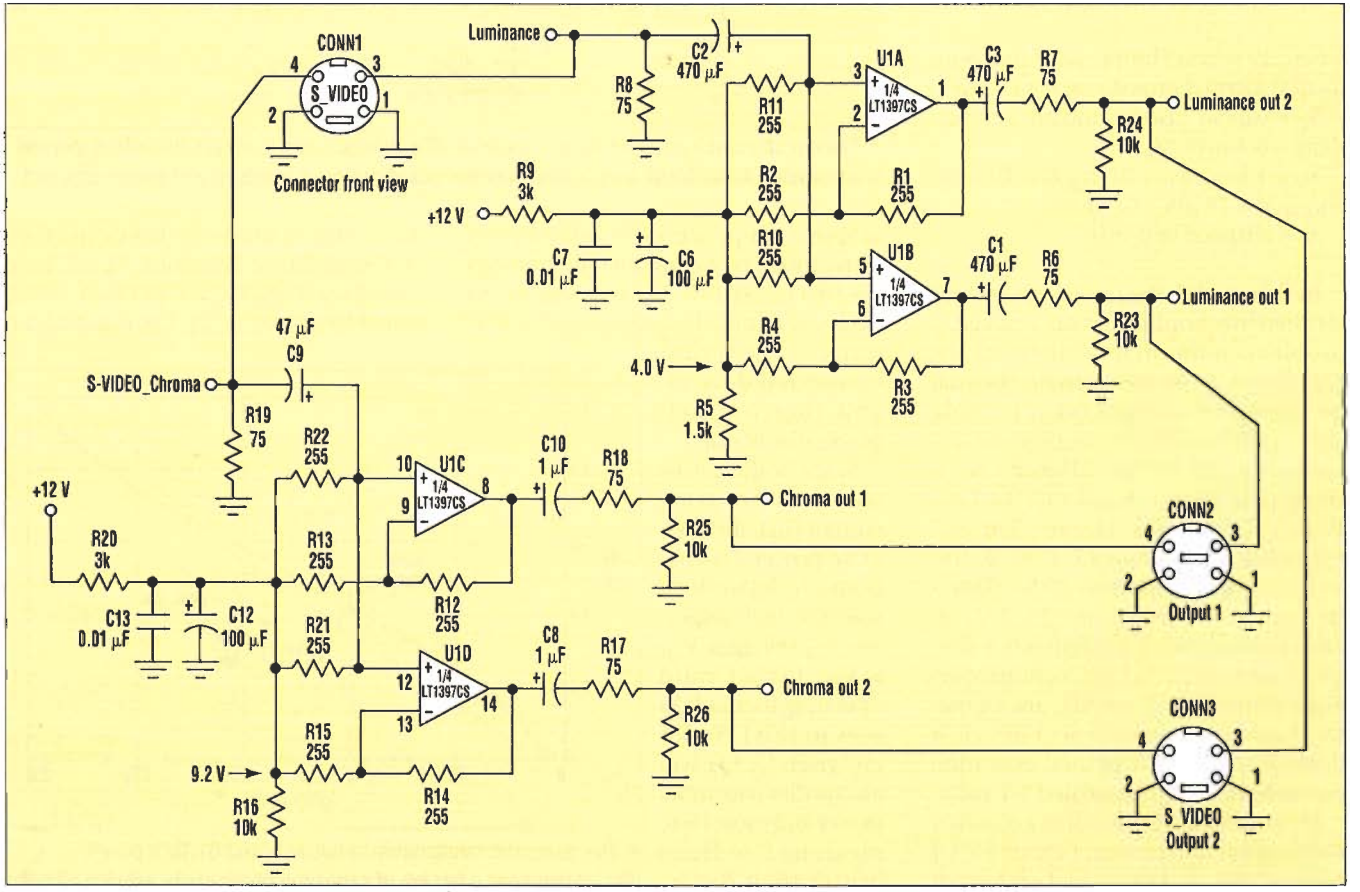
This circuit employs a quad 400-MHz gain-bandwidth, 800-V/μs, low-power, current-feedback amplifier *(Fig. 1)*. It's used to split a single S-video signal input (luminance and chroma) into two buffered S-video signal channels. Each channel can drive 80 mA into standard 75-Ω video cables.

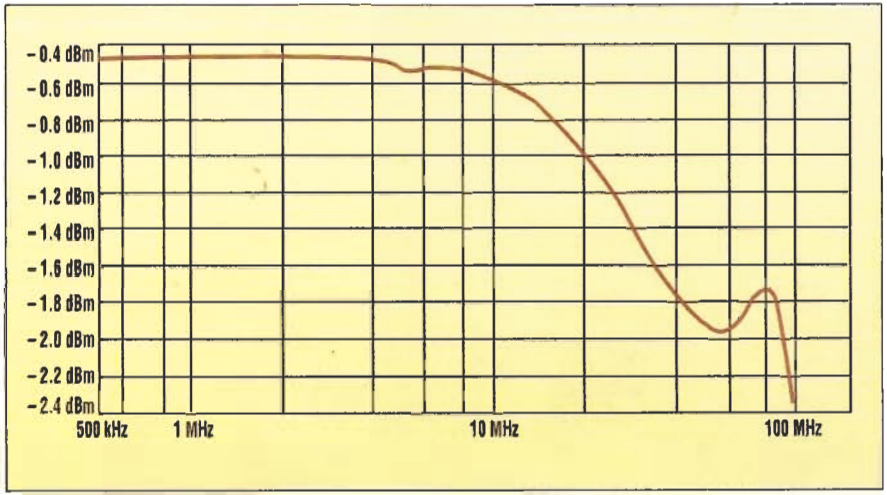
High-valued coupling capacitors are used at the input and outputs of the current feedback amplifiers to prevent loss of low-frequency information. The 10-kΩ resistors on the outputs allow the 470-μF output-coupling capacitors to charge. This reduces spikes when the cables are connected to the amplifier. The amplifiers are biased to prohibit the signal from clipping. R9 and R5 bias U1A and U1B to 4.0 V, while R20 and R16 bias U1C



1. A quad 400-MHz current-feedback amplifier is used to split an S-video signal into two buffered S-video signals.

and U1D to 9.2 V. Consequently, the amplified luminance and chroma signals are restricted from running into the supply rails.

The gain for this circuit (and layout) is flat to within ±0.2 dB from 500 kHz to 13 MHz for a unity gain *(Fig. 2)*. The 3-dB point for this circuit (and layout) is 112 MHz. A comparison between the input and output signals of a burst of chroma information revealed virtually no loss of signal fidelity. An input/output comparison of a stepped luminance signal also indicated no fidelity loss. The amplifiers in this circuit draw only 4.6 mA each, making the device an excellent low-power video-distribution amplifier solution.



2. The unity-gain amplifier's gain is flat to within ±0.2 dB from 500 kHz to 13 MHz.