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APPLICATION NOTE 1952

48x16 Video-Crosspoint IC Eliminates External Mux-Amps

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Abstract: To provide video loop-through or monitor outputs, large security systems often require additional multiplexer amplifiers (mux-amps) capable of driving standard video loads. The MAX4358 crosspoint switch eliminates the need for external mux-amps and their associated cost, space requirement, and power consumption.

Crosspoint switches are ideal for use in video security systems, which accept multiple camera inputs and provide playback and multiple loop-through to multiple monitors.

To provide video loop-through or monitor outputs, these systems often require additional multiplexer amplifiers (mux-amps) capable of driving standard video loads. Thus, a crosspoint matrix switch is often followed by one or more external mux-amps. As an alternative, you can employ a 32x16 nonblocking crosspoint-matrix switch, whose sixteen 2:1 multiplexers eliminate the need for extra mux-amps.

The internal 2:1 multiplexers are placed before the video output buffers, which are each capable of driving a standard video load directly. That configuration eliminates the need for external mux-amps and their associated cost, space requirement, and power consumption.

The IC shown (MAX4358) is a fully buffered, 32-input x 16-output non-blocking crosspoint switch that includes sixteen additional buffered analog video inputs (OSDFILL) intended for the insertion of on-screen display (OSD) information. (Non-blocking means that any input can be routed to any output.)

The sixteen fully buffered OSDFILL analog inputs are identical to the 32 inputs of the buffered crosspoint switch matrix, so the sixteen additional video inputs can implement a single-chip 48-input x 16-output crosspoint switch matrix (**Figure 1**). The output buffers feature programmable gain (AV = +1V/V or +2V/V), which allows versatility in routing short video traces or driving video transmission lines. Operating from dual ±3V to ±5V supplies or a single +5V supply, the device reduces power consumption by as much as 60% (vs. standard ±5V-only ICs).
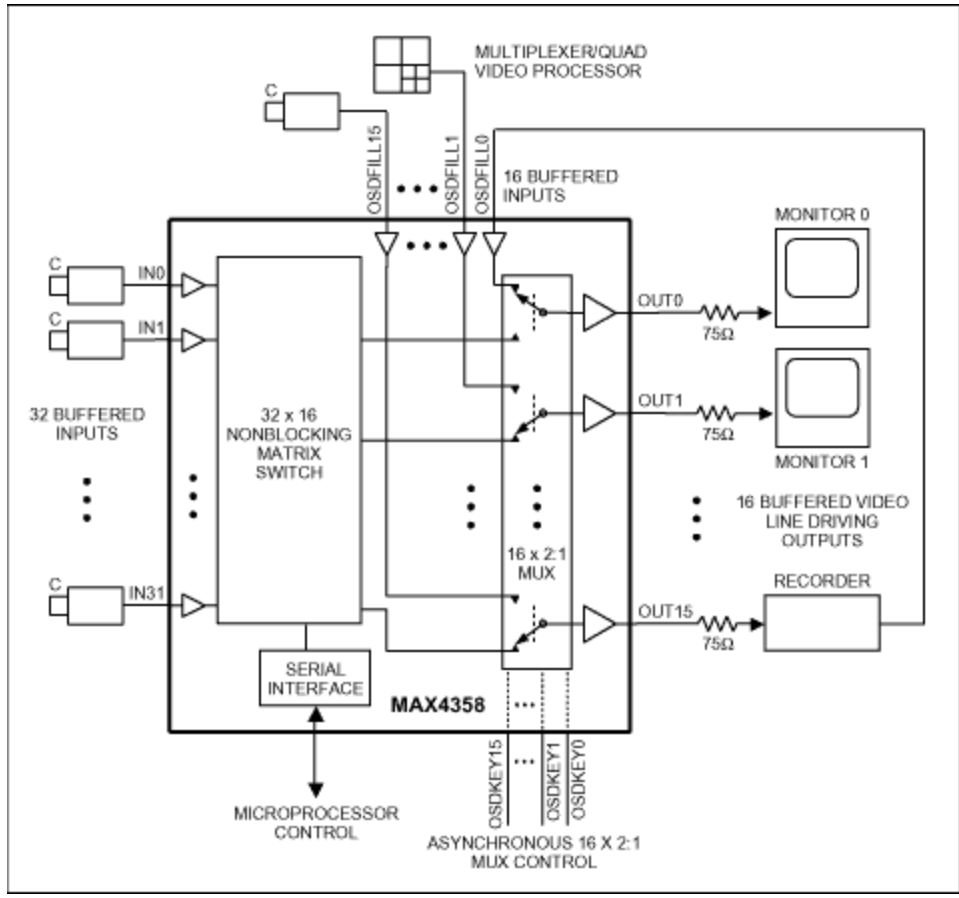
Figure 1. Internal buffers allow this IC to implement a 48x16 matrix switch without the need for external mux-amps.

A similar version of this article appeared in the February 20, 2003 issue of *EDN* magazine.

Related Parts

MAX4358	32 x 16 Nonblocking Video Crosspoint Switch with On-Screen Display Insertion and I/O Buffers

More Information

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