

New Products Series 7500

T-51-10-01

DESCRIPTION:

These models are designed for Video Application.

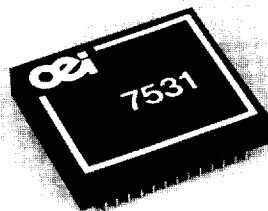
The A-D-C line is new for OEI. This line is expected to be a major concentration for OEI in the future. All models, including our op amps and multipliers are intended to address the Video Market Place.

The 7531 through 7534 are designed for applications demanding high speed digitization. The inputs are optimized to the industrial standard for video, 1Vp-p at 75 ohms. This series of ADCs requires no external support components, the user supplies only $\pm 15V$ power, clock signal at the desired conversion rate, and the analog input.

The 7531 6 bit converter has a full power input bandwidth of 12.5MHz and the 7532, 7533, and 7534 full power input bandwidth is 10MHz.

The 7531 through 7534 are constructed of discrete hybrid components encapsulated in module packages. The modular construction allows easy implementation in system designs, facilitating plug in convenience on standard cards (VME, Eurocard, etc.) or mother board assemblies. The video and clock inputs are sensitive signals. Only proper techniques will minimize ground noise pickup and crosstalk. Printed circuit board coaxial connectors should be used mounted as close as possible to the input pins. Use 50 ohm impedance transmission coax/connectors to the clock input and 75 ohm for the video input. Both inputs are internally terminated in the module. All ground pins should be connected to a massive system or "mother board" ground plane, as well as the ground returns of the input connectors.

oei A-D VIDEO CONVERTERS



- 7531—6 bit video 25MSPS ADC
- 7532—8 bit video 20MSPS ADC
- 7533—9 bit video 20MSPS ADC
- 7534—10 bit video 20 MSPS ADC

VIDEO STANDARD	LINES	TRANSMISSION BANDWIDTH	COLOR SUB-CARRIER	CONVERSION RATE	
				3 TIMES SUB-CARRIER	4 TIMES SUB-CARRIER
NTSC PAL	525	4.2MHz	3.58MHz	10.7MHz	14.32MHz
	625	5.5MHz	4.43MHz	13.29MHz	17.72MHz

FIGURE 1: VIDEO STANDARD COMPARISON CHART

BIT RESOLUTION	OEI ADC MODEL #	STEP SIZE IRE	STEP SIZE mV	INPUT BANDWIDTH MHz	LINEARITY % OF FULL SCALE
6	7531	2.188	15.6	12.5	.8
8	7532	.547	3.90	10	.4
9	7533	.273	1.95	10	.4
10	7534	.136	.976	10	TBA

FIGURE 2: ANALOG TO DIGITAL CONVERTER COMPARISON CHART

Gain and offset adjustments to the wide band input amplifier is accessible with a standard trimmer screwdriver.

Since human vision only has the ability to perceive around 64 grey levels, the 7531—6 bit ADC is a good choice for monochrome applications. The 7531 may be used in many applications ranging from low cost video digitizing, grey scale enhancement, image processing, medical imaging, radar signal processing, data acquisition, to high-speed oscilloscope storage. The 7531 is small in size, the module is $3.125 \times 2.625 \times .600$.

Keep in mind that a resolution increase of one bit yields a corresponding 6-dB improvement of signal to noise ratio. Thus, the 7532—8 bit, 7533—9 bit,

and 7534—10 bit ADCs will each give successive gain in signal to noise ratio. Added resolution will also aid in the area of color video transmission. The 7532, 7533, and 7534 can easily encode NTSC and PAL at three or four times color subcarrier conversion rates. Differential phase and differential gain are two of several parametric measurements that help evaluate the quality of color transmission throughout a system. Both of these parameters are also improved with increased converter resolution because the digital form more accurately represents the analog signal. Applications for the 7532, 7533, and 7534 include broadcast quality digitization, video time base correction, video frame storage, TV special effects, image processing, medical imaging, and real time spectrum analysis.

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