

Dual-Channel, 14-Bit, CCD Signal Processor with $Precision\ Timing^{TM}$ Core

AD9972

FEATURES OF EACH CHANNEL

1.8 V analog and digital core supply voltage

Correlated double sampler (CDS) with

-3 dB, 0 dB, +3 dB, and +6 dB gain

6 dB to 42 dB, 10-bit variable gain amplifier (VGA)

14-bit, 40 MHz analog-to-digital converter (ADC)

Black level clamp with variable level control

Complete on-chip timing generator

Precision Timing core with 400 ps resolution @ 40 MHz

On-chip 3 V horizontal and RG drivers

100-lead, 9 mm × 9 mm, 0.8 mm pitch, CSP_BGA package

Internal LDO regulator circuitry

APPLICATIONS

Professional HDTV camcorders
Professional/high end digital cameras
Broadcast cameras
Industrial high speed cameras

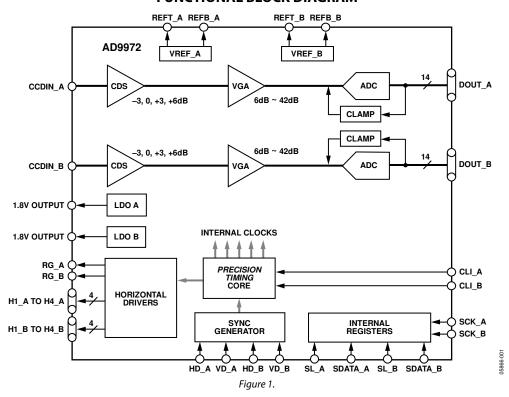
GENERAL DESCRIPTION

The AD9972 is a highly integrated, dual-channel CCD signal processor for high speed digital video camera applications. Each channel is specified at pixel rates of up to 40 MHz. The AD9972 consists of a complete analog front end with analog-to-digital conversion combined with a programmable timing driver. The *Precision Timing* core allows adjustment of high speed clocks with approximately 400 ps resolution at 40 MHz operation.

Each analog front end includes black level clamping, CDS, VGA, and a 40 MSPS, 14-bit ADC. The timing driver provides the high speed CCD clock drivers for the RG_A, RG_B, H1_A to H4_A, and H1_B to H4_B outputs. A 3-wire serial interface is used to program each channel of the AD9972.

Available in a space-saving, 9 mm \times 9 mm, CSP_BGA package, the AD9972 is specified over an operating temperature range of -25° C to $+85^{\circ}$ C.

FUNCTIONAL BLOCK DIAGRAM



For more information on the AD9772, contact Analog Devices, Inc. at: afe.ccd@analog.com.

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