

FEATURES

- 10-phase or 12-phase vertical transfer clocking**
- Supports 4-field and 5-field CCD readouts**
- Correlated double sampler (CDS)**
- 6 dB to 42 dB, 10-bit variable gain amplifier (VGA)**
- 12-bit, 36 MHz analog-to-digital converter (ADC)**
- Black-level clamp with variable level control**
- Complete on-chip timing generator**
- Precision Timing* core with <600 ps resolution**
- On-chip 3 V horizontal and RG drivers**
- 2-phase and 4-phase H-clock modes**
- Electronic and mechanical shutter support**
- On-chip driver for external crystal**
- On-chip sync generator with external sync input**
- 64-lead LFCSP package (9 mm × 9 mm, 0.5 mm pitch)**

APPLICATION

Digital still cameras

GENERAL DESCRIPTION

The AD9994 is a highly integrated CCD signal processor for digital still camera applications. It includes a complete analog front end with analog-to-digital conversion, combined with a fully programmable timing generator. The timing generator is capable of up to 12-phase vertical clocking to support advanced CCDs with 4-field and 5-field readouts. A *Precision Timing* core allows adjustment of high speed clocks with approximately 600 ps resolution at 36 MHz operation.

The AD9994 is specified at pixel rates of up to 36 MHz. The analog front end includes black-level clamping, CDS, VGA, and a 12-bit ADC. The timing generator provides the necessary CCD clocks: RG, H-clocks, V-clocks, sensor gate pulses, substrate clock, and substrate bias control. Operation is programmed using a 3-wire serial interface.

Packaged in a 64-lead LFCSP, the AD9994 is specified over an operating temperature range of -25°C to $+85^{\circ}\text{C}$.

FUNCTIONAL BLOCK DIAGRAM

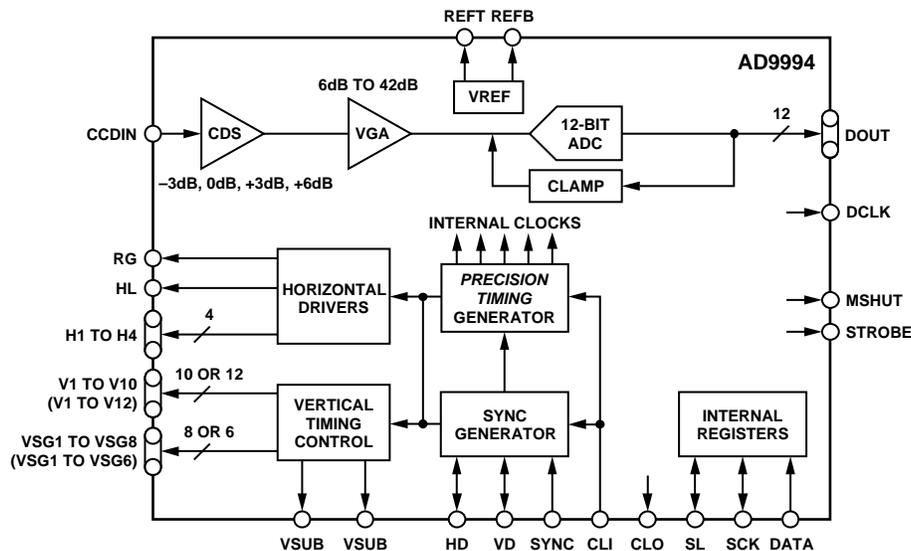


Figure 1.

For more information about the AD9994, email afe.ccd@analog.com.

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AD9994

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