ANALOG DEVICES

Dual Channel, 14-Bit CCD Signal Processor with V-Driver and *Precision Timing*

AD9990

FEATURES

- 1.8 V AFETG core
- Internal LDO regulators
- 24 programmable vertical clock signals
- 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, 32 Hz analog-to-digital converter (ADC)
- Black level clamp with variable level control
- Complete on-chip timing generator
- *Precision Timing* core with ~488 ps resolution
- On-chip 3 V horizontal and RG drivers
- General-purpose outputs (GPOs) for shutter and system support
- On-chip driver for external crystal
- On-chip sync generator with external sync input
- 112-ball CSP_BGA package, 8 mm × 8 mm, 0.65 mm pitch

APPLICATIONS

Digital still cameras

GENERAL DESCRIPTION

The AD9990 is a highly integrated CCD signal processor for digital still camera applications. It includes a complete analog front end with analog-to-digital conversion and a full-function programmable timing generator for a 2-channel output CCD. Each channel is specified up to 32 MHz. The timing generator is capable of supporting up to 24 vertical clock signals to control advanced CCDs. A *Precision Timing*™ core allows adjustment of high speed clocks with approximately 488 ps resolution at 32 MHz operation. The AD9990 also contains eight general-purpose outputs that can be used for shutter and system functions.

Each analog front end includes black level clamping, a CDS, a VGA, and a 14-bit ADC. The timing generator provides all the necessary CCD clocks: RG, H-clocks, V-clocks, sensor gate pulses, substrate clock, and substrate bias control.

The AD9990 is specified over an operating temperature range of −25°C to +85°C.

For more information about the AD9990, contact Analog Devices via email at afe.ccd@analog.com.

FUNCTIONAL BLOCK DIAGRAM

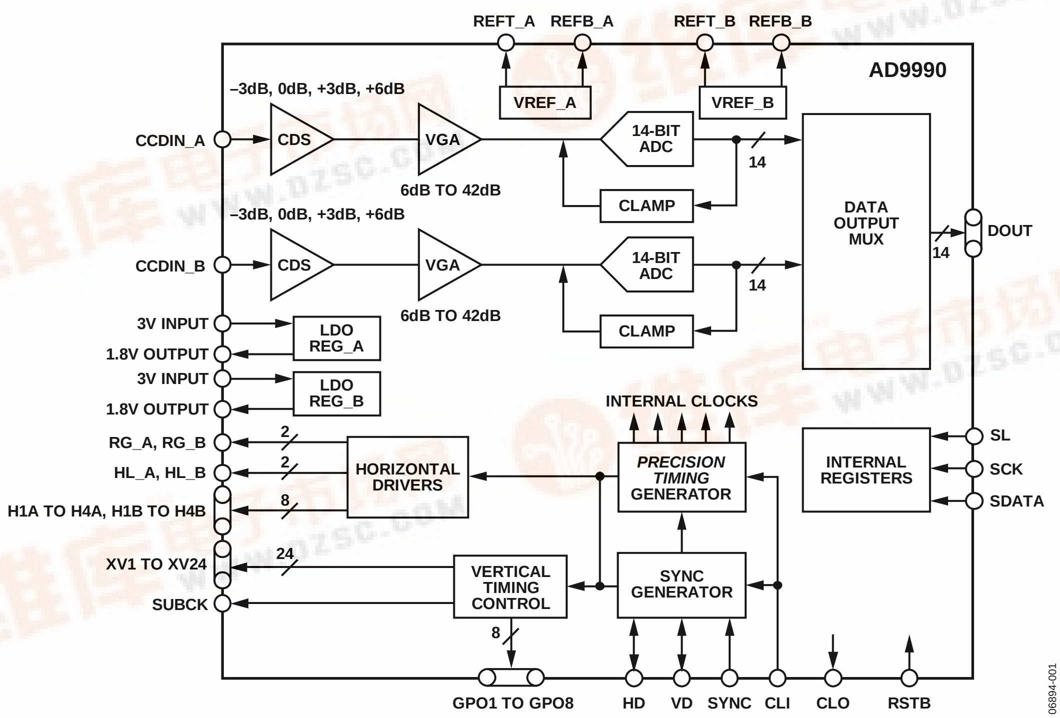

Figure 1.

Rev. Sp0

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.
Tel: 781.329.4700 www.analog.com