

### FEATURES

- Dual AFE channels**
- 1.8 V analog and digital core supply voltage**
- Serial data output with reduced range LVDS outputs**
- Differential analog inputs**
- CDS or SHA configuration (CDS bypass) with**  
-3 dB, 0 dB, +3 dB, and +6 dB gain
- 6 dB to 42 dB, 10-bit variable gain amplifier (VGA)**
- 14-bit, 75 MHz analog-to-digital converter (ADC)**
- Black level clamp with variable level control**
- Precision Timing core with 210 ps resolution @ 75 MHz**

### APPLICATIONS

- Digital video cameras**
- Digital still cameras**
- Digital copiers**
- Multifunction printers**
- High speed industrial cameras**

### GENERAL DESCRIPTION

The AD9978A is a highly integrated, dual-channel, charge-coupled device (CCD) signal processor for high speed digital video camera applications. Each channel is specified at pixel rates of up to 75 MHz and consists of a complete analog front end (AFE) with ADC conversion. The *Precision Timing*™ core allows adjustment of the correlated double sampler (CDS) and sample-and-hold amplifier (SHA) clocks with 210 ps resolution at 75 MHz operation. The AD9978A also contains a reduced range low voltage differential signaling (LVDS) interface for the dual-channel data outputs.

Each analog front end includes black level clamping, a CDS, a VGA, and a 75 MHz, 14-bit analog-to-digital converter (ADC). Operation is programmed using a 3-wire serial interface.

Packaged in a space-saving, 6 mm × 6 mm, 40-lead LFCSP, the AD9978A is specified over an operating temperature range of -25°C to +85°C.

### FUNCTIONAL BLOCK DIAGRAM

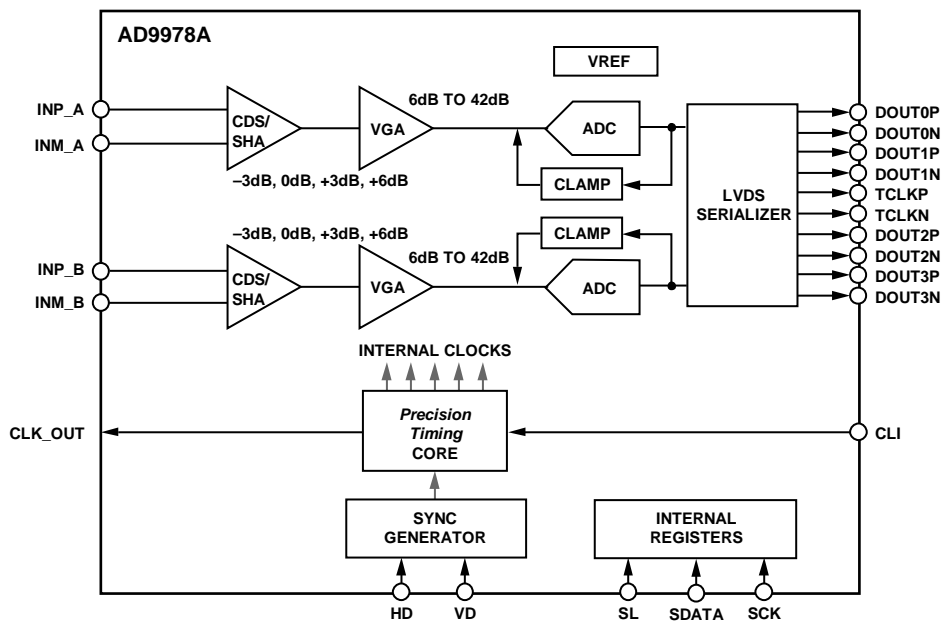


Figure 1.

For more information about the AD9978A, contact Analog Devices, Inc., at [afe.ccd@analog.com](mailto:afe.ccd@analog.com).

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**AD9978A**

**NOTES**

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