ANALOG DEVICES

64-Channel, 24-Bit Current-to-Digital ADC

ADAS1127

FEATURES

64-channel, low level current-to-digital converter Up to 24-bit resolution Up to 19.7 kSPS (50.7 µs integration time) Simultaneous sampling Ultralow noise (down to 0.4 fC [2500e-]) User-adjustable full-scale range INL: ±0.025% of reading ±0.75 ppm of FSR Very low power dissipation: 6.25 mW/channel LVDS self-clocked serial data interface SPI configuration registers (daisy-chain) **On-board temperature sensor and reference buffer** 10 mm × 10 mm, mini-BGA package Low cost external components Support tools **Evaluation board Reference design with reference layout**

FPGA Verilog code

APPLICATIONS

Medical, industrial, and security CT scanner data acquisition Photodiode sensors Dosimetry and radiation therapy systems Optical fiber power monitoring X-ray detection systems High channel-count data acquisition systems (current or voltage inputs)

GENERAL DESCRIPTION

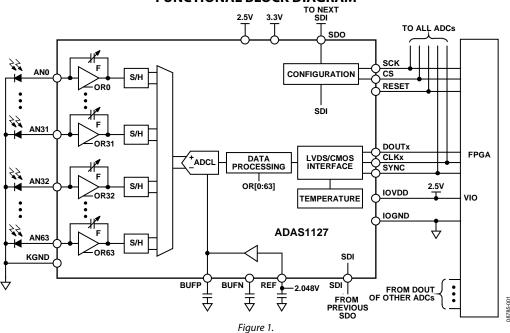
The ADAS1127 is a 64-channel, current-to-digital, analog-todigital converter (ADC). It contains 64 low power, low noise, low input current integrators, simultaneous sample-and-holds, and a high speed, high resolution ADCs with configurable sampling rate and resolutions up to 24 bits.

All converted channel results are output on a single LVDS selfclocked serial interface, which reduces external hardware.

An SPI-compatible serial interface allows configuration of the ADC using the SDI input. The SDO output allows the user to daisy-chain several ADCs on a single, 3-wire bus. The ADAS1127 uses the separate supply IOVDD to reduce the digital noise effect on the conversions.

The ADAS1127 is in a 10 mm \times 10 mm, mini-BGA package.

For more information on the ADAS1127, contact Analog Devices, Inc, at adas@analog.com.



FUNCTIONAL BLOCK DIAGRAM

Rev. Sp0

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ADAS1127

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