

FEATURES

- 256-channel, current-to-digital converter module
- Up to 24-bit resolution
- Variable integration time
 - Fastest integration time: 22.6 kSPS maximum (44.2 μ s minimum) at 20-bit resolution
- Low power dissipation: 2.3 mW per channel at any throughput
- Integral linearity
 - $\pm 0.050\%$ of reading, ± 1.0 ppm of FSR: all channels active
- Very low noise
- Simultaneous sampling
 - No dead time, no loss of charge, 100% charge collection
- User adjustable full-scale range
- On-board temperature sensor and reference buffer
- 15 mm \times 15 mm, CSP_BGA package
- Simple printed circuit board (PCB) design
 - Integrated capacitors for supply and reference decoupling
 - 0.80 mm pitch BGA allows low cost PCB technology
- 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

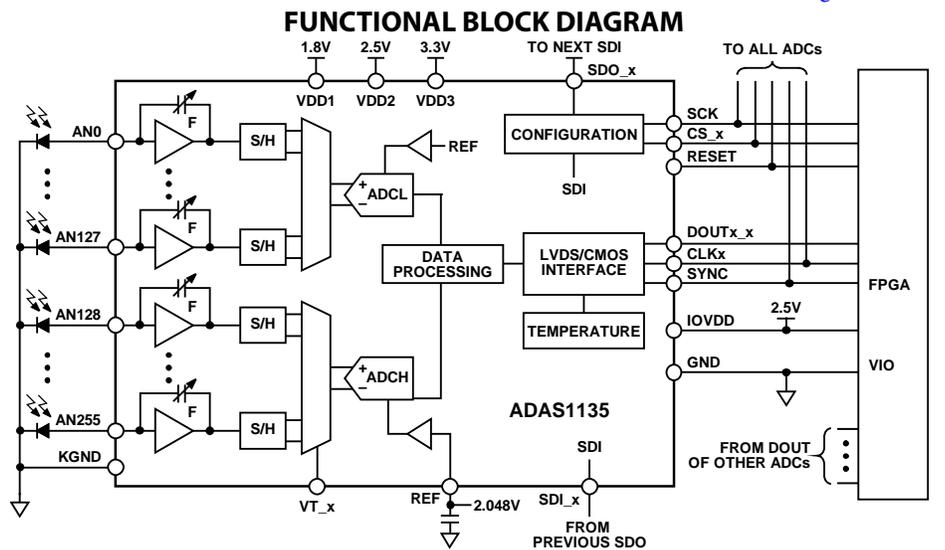
The [ADAS1135](#) is a 256-channel, current-to-digital, analog-to-digital converter (ADC) module. It contains 256 low power, low noise, low input current integrators, simultaneous sample-and-holds, and two high speed, high resolution ADCs with configurable sampling rate and resolutions of up to 24 bits. The signal chain and sampling architecture of the [ADAS1135](#) is designed to guarantee that all channels are simultaneously sampled, and that no charge is lost throughout the sampling process.

All converted channel results are output on a dual, low voltage differential signaling (LVDS), self clocked serial interface, which reduces external hardware.

An SPI-compatible serial interface allows configuration of the ADC using the SDI_x input. The SDO_x output allows the user to daisy-chain several ADCs on a single, 4-wire bus. The [ADAS1135](#) uses the separate supply, IOVDD, to reduce digital noise effect on the conversions.

The [ADAS1135](#) is in a 15 mm \times 15 mm, CSP_BGA package.

For more information on the [ADAS1135](#), contact Analog Devices, Inc., at: adas@analog.com.



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One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.
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