

256-Channel, 24-Bit, Current-to-Digital ADC Module

Data Sheet ADAS1135

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 µs minimum) at 20-bit resolution

Low power dissipation: 2.3 mW per channel at any

throughput Integral linearity

±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 × 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

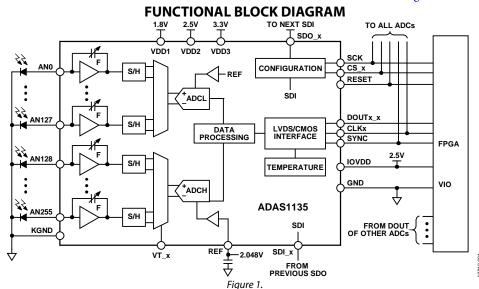
The ADAS1135 is a 256-channel, current-to-digital, analog-to-digital converter (ADC) module. It contains 256 low power, low noise, low input current integrators, simultaneous sample-and-holds, and two high speed, high resolution ADCs with configurable sampling rate and resolutions of up to 24 bits. The 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.



Rev. SpC

Document Feedback
Information furnished by Analog Devices is believed to be accurate and reliable. However,
no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or
other rights of third parties that may result from its use. Specifications subject to change without
notice. No license is granted by implication or otherwise under any patent or patent rights of
Analog Devices. Trademarks and registered trademarks are the property of their respective

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A. Tel: 781.329.4700 ©2015-2017 Analog Devices, Inc. All rights reserved. Technical Support www.analog.com

ADAS1135 Data Sheet

NOTES