



November 27, 2012

Analog Devices' 256-Channel, 16-Bit Digital X-Ray Analog Front End Delivers Industry's Best Combination of Noise, Power and Image Quality

ADI's ADAS1256 analog front end (AFE) integrates the complete charge-to-digital conversion signal chain on a single chip, enabling a variety of digital X-ray modalities including portable systems.

NORWOOD, Mass.--(BUSINESS WIRE)-- [Analog Devices, Inc.](http://www.analog.com), (NASDAQ: ADI), the leading provider of data conversion technology* and longtime collaborator to the medical imaging industry, today introduced a highly integrated digital X-ray analog front end (AFE) with the industry's lowest noise performance in multiple power-mode options, and the highest image quality. The 256-channel ADAS1256 digital X-ray AFE is the industry's first single-chip solution to integrate the complete charge-to-digital conversion signal chain by incorporating low-noise programmable-charge amplifiers, correlated double-sampling circuitry and 16-bit A/D converters. With a noise figure of an equivalent charge of 560 electrons at a 2-picocoulomb full-scale range, the ADAS1256 enables high resolution digital X-ray images while reducing patient exposure to X-ray dose. The ADAS1256 has multiple functional power modes ranging from 1-mW/channel to 3-mW/channel, allowing manufacturers to address a wide range of digital X-ray modalities including portable radiology and mammography as well as high speed fluoroscopy and cardiac imaging.

- Visit the product page and download a short-form datasheet: <http://www.analog.com/ADAS1256>
- View complete datasheet and order evaluation boards by completing a Non-Disclosure Agreement (NDA) found on the ADAS1256 product page: <http://www.analog.com/ADAS1256>
- Learn more about ADI's digital X-ray and imaging technologies: <http://healthcare.analog.com/en/imaging/segment/health.html>

"Thanks to the ultra-low-noise profile and dynamic range of the ADAS1256, digital X-ray technology will continue to deliver better diagnostic image quality and reduce radiation dosage applied to patients compared to existing digital X-ray systems," said Pat O'Doherty, vice president, healthcare group, Analog Devices. "By achieving this level of performance while adhering to a strict power budget, the ADAS1256 digital X-ray AFE provides medical equipment designers with a single device that serves the growing high-performance requirements of the portable digital X-ray market."

About the ADAS1256 Digital X-Ray AFE

The ADAS1256 is a 256-channel, simultaneous sampling, high dynamic range, low power analog front end that is a complete charge-to-digital conversion signal chain. It incorporates 256 low noise integrators, low pass filters, and correlated double samplers that are multiplexed into a high speed, 16-bit, A/D converter. All converted channel results are output on a single LVDS (low-voltage differential signaling) self-clocked serial interface. The ADAS1256 can be programmed using an SPI-compatible daisy-chain serial interface. It is delivered on a high density system-on-flex (SOF) package and can be directly mounted on a digital X-ray panel.

ADAS1256 Digital X-Ray AFE Key Features

- Single-chip, 256-channel, charge-to-digital conversion
- 16-bit resolution with no missing codes
- Simultaneous sampling
- User adjustable full-scale range up to 32 pC (picocoulombs)
- Ultralow noise: 560 e⁻ at 2pC range
- Multiple functional power modes: from 1-mW/ch to 3-mW/ch
- Power-down and sleep modes down to 0.005-mW/ch

Pricing, Availability and Complementary Products

Part Number	A/D Converter Resolution	Channel Count	Unit Price in 1K-piece Quantities
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ADAS1256	16 bits	256	\$256
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The ADAS1256 is compatible with the [ADP7104](#) and [ADP1708](#) low dropout linear regulators, [ADP1828](#) synchronous, step-down dc-to-dc controller, [ADR444](#) voltage reference, [ADCLK846](#) LVDS/CMOS fanout buffer and [ADXL345](#) MEMS digital accelerometer.

About Analog Devices

Innovation, performance, and excellence are the cultural pillars on which Analog Devices has built one of the longest standing, highest growth companies within the technology sector. Acknowledged industry-wide as the world leader in data conversion and signal conditioning technology, Analog Devices serves over 60,000 customers, representing virtually all types of electronic equipment. Celebrating over 40 years as a leading global manufacturer of high-performance integrated circuits used in analog and digital signal processing applications, Analog Devices is headquartered in Norwood, Massachusetts, with design and manufacturing facilities throughout the world. Analog Devices is included in the S&P 500 Index.

** [Analog Devices, Inc.](#) leads the worldwide data converter market with a 48 percent share, according to industry analyst firm [Databeans, Inc.](#) in its market research report titled "2011 Data Converters." Analog Devices' 48 percent share is larger than the combined market share of the nearest eight competitors.*

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Source: Analog Devices, Inc.

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