256-Channel, 16-Bit, Charge-to-Digital AFE on Flex

Data Sheet **ADAS1256**

FEATURES

- 256-channel, charge-to-digital conversion on a single chip
- 16-bit resolution with no missing codes
- Simultaneous sampling
- User adjustable full-scale range up to 32 pC
- Down to 22 µs line time
- Ultralow noise: 560 e^- at 2 pC range
- INL ± 2.5 LSB or 57.5 ppm, ADC included
- Multiple functional power modes: 1 mW/channel to 3 mW/channel
- Multiple power-down and sleep modes: down to 0.005 mW/channel
- Measurement of electron or hole collected charge
- Tested and delivered on high density system on flex (SOF)
- LVDS/CMOS self-clocked serial interface
- SPI daisy-chain configuration registers
- On-board AFE timing sequencer
- On-board temperature sensor and reference buffer

APPLICATIONS

- Digital X-ray panel
- Photodiode sensors array
- CT scanner
- High channel count, data acquisition systems (current or voltage input)

GENERAL DESCRIPTION

The ADAS1256 is a 256-channel, 16-bit, digital X-ray analog front end (AFE) that integrates the complete charge-to-digital conversion signal chain on a single chip. It enables a wide range of digital X-ray modalities, including portable radiology and mammography as well as high speed fluoroscopy and cardiac imaging. The ADAS1256 is delivered on a high density system-on-flex (SOF) package that can be directly mounted on a digital X-ray panel.

All converted channel results are output on a single LVDS self-clocked serial interface that significantly reduces external hardware.

An SPI-compatible serial interface allows configuration of the AFE, using the SDI input. The SDO output allows the user to daisy-chain several AFEs on a single 3-wire bus.

An integrated AFE timing sequencer controls the sampling activity of the analog front end (AFE). The sequencer is programmed via the SPI port and is timed by a single clock, ACLK.

FUNCTIONAL BLOCK DIAGRAM

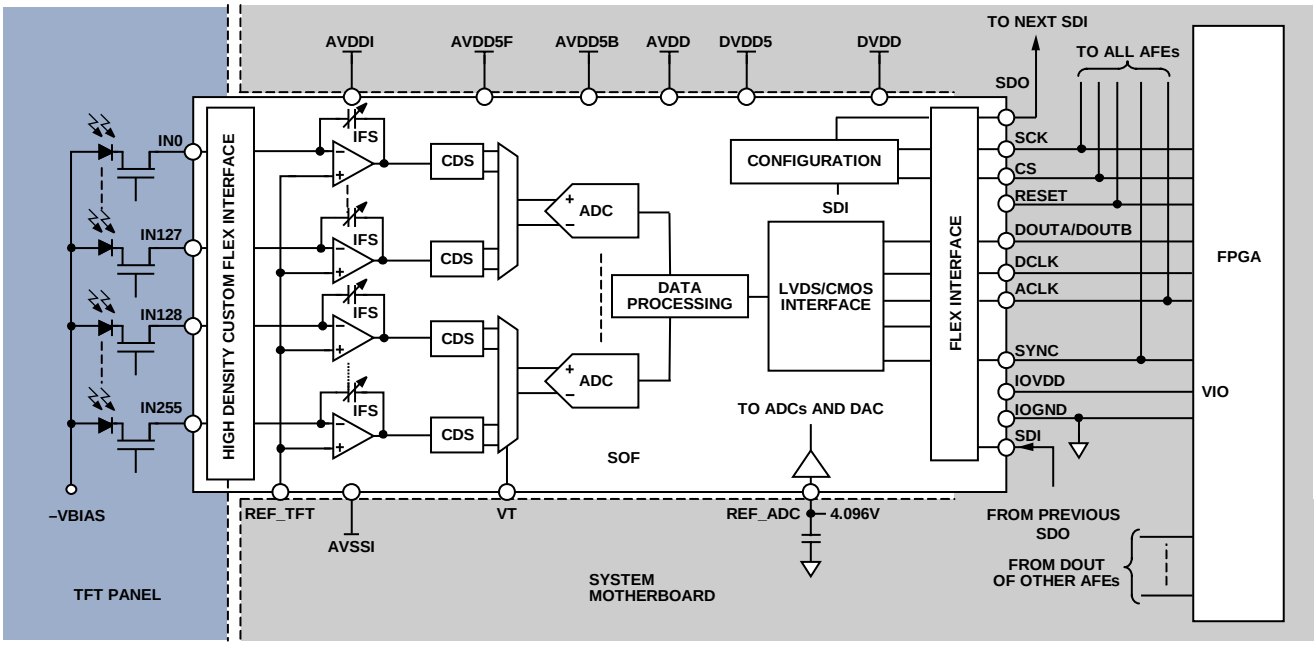

Figure 1.

Rev. Sp0 Document Feedback

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ADAS1256* PRODUCT PAGE QUICK LINKS

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COMPARABLE PARTS

View a parametric search of comparable parts.

DOCUMENTATION

Data Sheet

- ADAS1256: 256-Channel, 16-Bit, Charge-to-Digital AFE on Flex Data Sheet

REFERENCE MATERIALS

Press

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

DESIGN RESOURCES

- ADAS1256 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

DISCUSSIONS

View all ADAS1256 EngineerZone Discussions.

SAMPLE AND BUY

Visit the product page to see pricing options.

TECHNICAL SUPPORT

Submit a technical question or find your regional support number.

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NOTES

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