High-precision 14b 150MS/s ADC

NSAD_TS130M_3V3_1V2_AD14B150M

Main characteristics

- TSMC 130 M
- 3.3V/1.2V supply voltages
- 13 ENOB
- 150MS/s
- 295mW

Deliverables

- GDS II layouts
- LEF abstracts
- CDL netlists
- Liberty timings
- Verilog description
- A full datasheet
- An integration note

Status

Pre-silicon

Product description

The nSAD_TS130M_3V3_1V2_AD14b150M is a 150MS/s, 13 ENOB, high-precision pipeline AD converter designed on the TSMC 130 M technology. Built around a fully-differential pipeline converter and a digital error correction circuitry, it consumes 295mW on silicon, reaching an energy efficiency of 240fJ/conversion-step. A low noise input buffer is provided for easier interfacing with your analog/RF front-end.

Applications

- AFE for broadband wireline communications
- Video capture and motion detection
- High speed serial communication (HDMI, Ethernet…)
- AFE for fixed and mobile wireless communication
- Medical imaging (IR, Doppler…)

Main features

- Internal input buffers, reference generator, biasing and decoupling
- Input bandwidth and sampling rate digitally scalable for optimal power consumption
- 295mW consumption in operation @150MSps, 150MHz BW
- 250mW consumption in operation @150MSps, 75MHz BW
- 204mW consumption in operation @75MSps, 75MHz BW
- 182mW consumption in operation @75MSps, 37.5MHz BW
- Power-down mode
- 1.3mm² area
- Dual 3.3/1.2V supply for highest linearity
- 20 to 150MS/s scalable sampling rate
- 80dB SNR
- 86dB SFDR
- 1 to $4V_{pp\_diff}$ selectable input range

nSilition
Smaller, Smarter, Stronger

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Further information

For further information about this product and other nSilition IPs, development roadmap, availability and licensing terms, please e-mail to sales@nsilition.com.

Delivery and support

This AD converter cell is available as hard macro-cell for reuse in any design based on the TSMC 130 M CMOS process. No extra IP license from any third party will be needed for the cells or the cell library.

In addition, full support service is available on request. Support can include close integration follow-up by our design team or custom-made cells or features.

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Porting to another process

The nSAD_TS130M_3V3_1V2_AD14b150M AD converter cell is silicon proven in the TSMC 130 M CMOS process. It can be easily ported to another foundry and/or another similar CMOS process node upon request. Please contact us for details and availability.

About nSilition

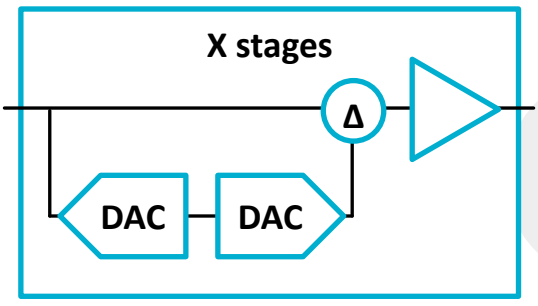
nSilition is a leading analog and mixed-signal semiconductor IP provider.

nSilition specializes in the development of high quality analog and mixed-signal high performance semiconductor IPs. With reference designs available for 10b to 14b A/D and D/A converters, high-speed IO circuits, PFM and PWM high efficiency DC/DC integrated converters and high precision bandgap references; nSilition enables the highest value analog and mixed-signal functionalities at the lowest risk.

The “IP design” service of nSilition offers top-class quality, customization and support dedicated to your needs and your specifications.

Disclaimer

The information provided by nSilition has been verified and is believed to be accurate. nSilition and all its right holders reserve the right to make changes to the information contained herein without notice. They reserve also the right to make changes to the product without notification. No liability shall be incurred as a result of the use or application of the information provided in this data sheet and/or the use of the corresponding product in any case.



Pipeline-ADC stage block diagram

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