

## Main characteristics

- TSMC 90 G
- 1.2V supply voltage
- 11 ENOB
- 200MS/s
- 140mW

## 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\_TS90G\_1V2\_AD2x12b200M is a dual 200MS/s, 11 ENOB, dual TSMC 90 G technology. Built around a fully-differential pipeline converter and a digital error correction circuitry, it consumes 140mW on silicon, reaching an energy efficiency of 340fJ/conversion-step. A low noise input buffer is provided for easier interfacing with your analog/RF front-end.

## Applications

- 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
- 140mW consumption in operation @200MSps, 100MHz BW
- 117mW consumption in operation @100MSps, 100MHz BW
- 106mW consumption in operation @100MSps, 50MHz BW
- Power-down mode
- 1.3mm<sup>2</sup> area
- Single 1.2V supply
- 20 to 200MS/s scalable sampling rate
- 68dB SNR
- 72dB SFDR
- $\pm 0.5$  INL and  $\pm 1$  DNL



## Further information

For further information about this product and other nSilitation IPs, development roadmap, availability and licensing terms, please e-mail to [sales@nsilitation.com](mailto:sales@nsilitation.com).

## Delivery and support

This AD converter cell is available as hard macro-cell for reuse in any design based on the TSMC 90 G 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.

## Porting to another process

The nSAD\_TS90G\_1V2\_AD2x12b200M AD converter cell is silicon proven in the TSMC 90 G 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 nSilitation

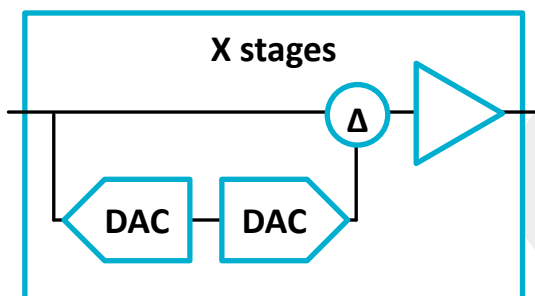
nSilitation is a leading analog and mixed-signal semiconductor IP provider.

nSilitation 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; nSilitation enables the highest value analog and mixed-signal functionalities at the lowest risk.

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

## Disclaimer

The information provided by nSilitation has been verified and is believed to be accurate. nSilitation 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*

