

## Texas Instruments unveils industry's first 12-bit, 1-GSPS ADC with buffered input, simplifying analog front-end design in wide-bandwidth applications

### Analog-to-digital converter provides twice the sample rate for wireless communications, defense, and test and measurement equipment

DALLAS, Oct 26, 2009 /PRNewswire via COMTEX News Network/ -- Texas Instruments introduced today an analog-to-digital-converter (ADC) that combines 12 bits of resolution with a 1-GSPS sampling rate, effectively doubling the amount of signal bandwidth that can be captured in a single ADC. The ADS5400 offers an unmatched signal-to-noise ratio (SNR) of 59 dBFS and 75 dBc spurious-free dynamic range (SFDR) in first Nyquist, and 58 dBFS SNR and 70 dBc SFDR performance for intermediate frequencies (IFs) beyond 1000 MHz. A fully buffered analog input isolates the onboard sample and hold's internal switching to prevent disturbing the signal source, while providing a high-impedance input. The ADS5400's performance enables designers to create smaller, higher-performance and higher-density wide-bandwidth receivers and digitizers. For product details see [www.ti.com/ads5400-pr](http://www.ti.com/ads5400-pr)

"The ADS5400 has enabled our latest modular component, the QuiXilica Atlas-V5 VXS board, to handle 12 GB/s of data and generate a real-time result," comments Andrew Reddig, Tekmicro's president and chief technology officer. "Our launch customers are using the Atlas to create higher performance solutions for critical applications that were unachievable with previous A/D technology."

"Customers can use the ADS5400's ground-breaking combination of resolution, sample rate and bandwidth to significantly enhance applications in defense by improving radar and signal intelligence (SIGINT) capabilities, and can double the capture bandwidth of signals with 12-bit resolution in test and measurement," said Art George, senior vice president of TI's High-Performance Analog business unit.

Developed on TI's high-speed, proprietary BiCom3( )complementary bipolar SiGe technology, the monolithic ADS5400 is specified over the full industrial temperature range (-40 degrees C to 85 degrees C). The BiCom3 technology's silicon-on-insulator (SOI) process makes it well suited for high-temperature and high-radiation environments.

#### *Key features and benefits*

- Fully buffered, 12-bit, 1-GSPS ADC with 2.1 GHz input bandwidth, for wideband signals in oversampling and undersampling applications with 200 MHz or greater signal bandwidth
- Buffered analog input provides constant input impedance across time and frequency and eliminates sample-and-hold kickback, simplifying input matching for passive and active analog front end
- The ADS5400's adjustable fine gain, offset and phase ease the interleaving of two or more ADCs to create a multi-GSPS digitizer, or the balancing of two ADCs in an I/Q receiver
- Thermally-enhanced, 100-pin TQFP (16 mm x 16 mm footprint) package with exposed thermal pad
- User-selectable single- or dual-bus DDR LVDS outputs provide designers flexibility to choose between I/O speed and pin-count
  
- Customers can speed time-to-market with compatible TI devices: THS9000 and THS9001 amplifiers to support input frequencies up to 500 MHz; the CDCE72010 high-performance, low phase noise, and low skew clock; the DAC5682Z dual, 16-bit, 1 GSPS DAC; the TPS727xx and TPS717xx low dropout regulators; and the TMS320C6474 and TMS320C6457 DSPs.

#### *Availability and pricing*

The ADS5400 is available now in a 100-pin TQFP package and is priced at \$775 in 100-unit quantities. An EVM is available for \$1299 and is compatible to TI's [TSW1200EVM](#) digital capture card, offering a flexible evaluation environment for ADC analysis.

*Find out more about TI's data converters at the links below:*

- ADS5400 evaluation modules and samples: <http://www.ti.com/ads5400-pr>
- Ask questions and share knowledge on TI's E2E online community:  
<http://www.ti.com/e2e-pr>
- System block diagrams
  - Radar (<http://www.ti.com/radar>)
  
- High Speed Data Acquisition (<http://ti.com/hsdataacq>)

### *About Texas Instruments*

Texas Instruments (NYSE: TXN) helps customers solve problems and develop new electronics that make the world smarter, healthier, safer, greener and more fun. A global semiconductor company, TI innovates through manufacturing, design and sales operations in more than 30 countries. For more information, go to [www.ti.com](http://www.ti.com)

### *Trademarks*

All registered trademarks and other trademarks belong to their respective owners.

TXN-F

SOURCE Texas Instruments Incorporated

<http://www.ti.com>

Copyright (C) 2009 PR Newswire. All rights reserved