Analog Devices Announces Industry’s Fastest 16-bit ADC at 250 MSPS

The industry’s fastest 16-bit ADC (analog-to-digital converter)--at 250 MSPS (mega samples per second)--was unveiled today by data converter market share leader* Analog Devices, Inc. (ADI). The AD9467 16-bit, 250 MSPS ADC operates on 35% less power at 25% higher sampling rate than any other 16-bit data converter, providing a new level of signal processing performance for test and measurement instrumentation, defense electronics, and communications applications where high resolution over a wide bandwidth is needed. The AD9467 delivers resolution and a fast sample rate while simultaneously achieving a high SFDR (spurious-free dynamic range) of up to 100 dBFs and SNR (signal-to-noise ratio) performance of 76.4 dBFS. The device’s SFDR of 90 dBFS up to 300 MHz analog input and 60-femtosecond rms (root mean square) jitter helps lower the signal chain bill of materials component count by allowing engineers to increase system performance at higher intermediate frequencies, thereby reducing the number of signal down-conversion stages. Download data sheet or order samples and evaluation boards.

“We needed a 16-bit, 250 MSPS data converter with 90 db of SFDR for one of our key customer's highly advanced, data acquisition systems,” said Brian Kimball, principal hardware engineer, Mercury Computer Systems, a leading provider of open, application-ready, multi-INT subsystems for the intelligence, surveillance and reconnaissance market “The AD9467 data converter was designed into this system because it met our customer’s SFDR, ENOB (effective number of bits), and power requirements. Analog Devices engineers worked with us as trusted advisors to provide early-access silicon and provided design support to enable the timely development of our prototype product.”

The AD9467 can be used with ADI's AD9523/24 low-jitter clock generators and ADL5562 3.3 GHz ultra-low distortion RF/IF differential amplifier to provide a data conversion signal chain solution.

"The AD9467 converter is attractive to National Instruments because of its industry-leading combination of sample rate and resolution," said Phil Hester, senior vice president of R&D, National Instruments, a leading global supplier of hardware and software for engineers. "We are currently developing a module based on the AD9467 for our NI FlexRIO product family, which couples this new data conversion performance point with FPGAs that can be programmed using NI LabVIEW software. The AD9467 helps us maintain leadership in providing innovative solutions for test and measurement, software-defined radio, medical imaging, and scientific research applications."

AD9467 16-bit, 250 MSPS ADC Key Features and Benefits:

• 16-bit resolution with high signal bandwidths up to 300 MHz enables advanced signal acquisition subsystems in common radio platforms, radar systems, and spectrum analysis.
• On-chip IF (intermediate frequency) sampling circuit and buffered analog inputs optimize the AD9467 for the highest ENOB and ease of use.
• High dynamic range over broad signal bandwidth enables software-defined radios for use with multiple standards, such as LTE/W-CDMA, MC-GSM (class 1) and CDMA.
• Programmable full-scale input range allows trade-off between SNR and SFDR enabling the design of more sensitive radar systems with the ability to acquire and track smaller targets with better accuracy. See chart below.

Input Span	**SNR**	**SFDR**	**Analog Input**	**Sample Rate**
2.5 Vp-p	75.1 dBFs	90 dBFs	300 MHz	250 MSPS
2.0 Vp-p	74 dBFs	95 dBFs	170 MHz	250 MSPS
2.5 Vp-p	76 dBFs	100 dBFs	100 MHz	160 MSPS

Pricing, Availability, and Tools

Product	**Sample Availability**	**Production Release**	**Resolution (Bits)**	**Sample Rate (MSPS)**	**Price Each In 1,000 Quantities**	**Packaging**
AD9467-25	NOW	November	16	250	$120	72-lead

0 [1]		2010				LFCSP
AD9467-200 [2]	NOW	November 2010	16	200	$100	72-lead LFCSP
AD9467-200EBZ [3] Evaluation Board	NOW	November 2010	-	-	$300 per unit in single unit quantities	-
AD9467-250EBZ [4] Evaluation Board	NOW	November 2010	-	-	$300 per unit in single unit quantities	

Data Converter Design Tools: ADC Behavioral Models

Analog Devices' ADIsimADC online analog-to-digital behavioral model accurately models the typical performance characteristics of many of ADI's high-speed converters. The model faithfully reproduces the errors associated with both static and dynamic features such as AC linearity, clock jitter, and many other product specific anomalies. This tool requires no downloads and allows you to graph specific performance plots and select products. ADC Analyzer is a downloaded tool that runs the behavioral models and configures evaluation boards. VisualAnalog takes this concept further by allowing designers to customize their input signal and data analysis. An input signal can be constructed from sine waves, noise sources, and vector data to see how an ADC will perform in real-world conditions.

Data Converters: Bridging the Analog and Digital Worlds

More designers turn to Analog Devices than any other supplier for the high-performance conversion technology required to bridge the analog and digital worlds in myriad electronic systems. With the industry's leading portfolio of ADCs (analog-to-digital converters) and DACs (digital-to-analog converters), Analog Devices' converter products feature the right combination of sampling rates and accuracy with low noise, power, and price and small package size required by industrial, medical, automotive, communications, and consumer electronics. To view ADI's ADC selection guide, visit http://www.analog.com/ADCsearch [5]. For ADC drivers, visit http://www.analog.com/ADCdrivers [6]. To view ADI's DAC selection guide, visit

http://www.analog.com/DACsearch [7].

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