100-MSPS ADC for Imaging Applications

Texas Instruments Incorporated (TI) (NASDAQ: TXN) today introduced an octal, 12-bit, 100-MSPS analog-to-digital converter (ADC) that provides the lowest power consumption in its class. The ADS5295 uses less than 80 mW per channel, which diminishes board heat and power dissipation in higher-channel-density applications. It incorporates TI's unique digital processing block, which combines commonly used digital functions to help improve signal-to-noise ratio (SNR) and filter harmonics while reducing output data rate for narrow-band applications. The ADS5295 can be used in phase-array architecture systems with higher channel counts, such as ultrasound, security x-ray and non-destructive testing (NDT) applications.

Key features and benefits of the ADS5295:

- Lowest power per channel for the speed, with low noise: Using only 80 mW-per-channel at 100 MSPS and eight channels, it enables designers to increase channel count without increasing power dissipation high-density applications, while still achieving a low noise of 71 decibel full scale (dBFS) SNR.
- Reduced system cost and complexity: TI's highly integrated digital processing block integrates commonly used digital functions, such as a low-frequency noise suppression mode, digital filtering options and programmable mapping of low-voltage differential signaling (LVDS) output pins. This lowers FPGA cost and simplifies LVDS output routing, reducing the number of printed circuit board (PCB) layers and bill of materials cost.
- Reduced interface lines: Outputs data over one or two wires of LVDS pins per channel, reducing the number of interface lines. This creates a two-wire interface, which keeps the serial data rate low to further reduce FPGA cost.

Texas Instruments
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