

High-Speed ADC Family Achieves Low Power With High Performance

A new family of high-speed analog-digital converters allows designers to obtain exactly the right level of performance and power consumption for their specific applications

A new family of high-speed analog-to-digital converters (ADCs) from Linear Technology combines outstanding AC performance with extremely low power, supporting the effective

design of wireless and cable communications systems. The new LTC2220 family includes ADCs ranging from 10 Msps up to 170 Msps at 12-bit and 10-bit resolution, as well as 14-bit converters up to 80 Msps.

This new ADC family complements the company's existing LTC1750 family of 5 V ADCs with maximum AC performance. The LTC2220 family of 3.3 V converters features significantly lower power than competing devices without sacrificing AC performance. These low power ADCs excel at undersampling, making them well suited for communications applications such as WCDMA cellular basestation transceivers, digital predistortion

power amplifier linearization, and cable modem termination systems. Other important applications include high definition television (HDTV) and medical imaging systems.

First Product: 12-Bit, 135Msps ADC

The LTC2224, a 12-bit 135 Msps ADC, exemplifies the performance of the entire family. At just 630 mW, in a 7 × 7mm QFN package, it has the lowest power at this speed, is almost half the size of its nearest competitor, yet achieves over 67 dB SNR up to 170 MHz input. Further, the system footprint is reduced because few external bypasses are needed. The device is ideal for low power base station designs and optimized for undersampling. The LTC2224 features a 775 MHz bandwidth and achieves 77 dB SFDR up to 250 MHz input. Pin-compatible versions at sample rates of 105 Msps and 80 Msps feature even lower power. Pin-compatible 10-bit versions at each speed are also in full production. Figure 1 shows the functional block diagram and SFDR plot for the LTC2224.

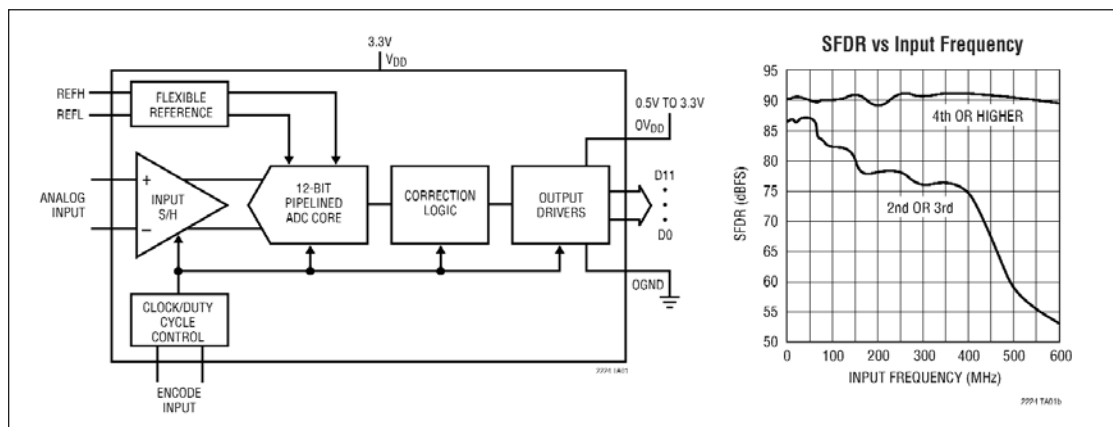


Figure 1 · Functional block diagram (left) and SFDR plot (right) for the LTC2224.

