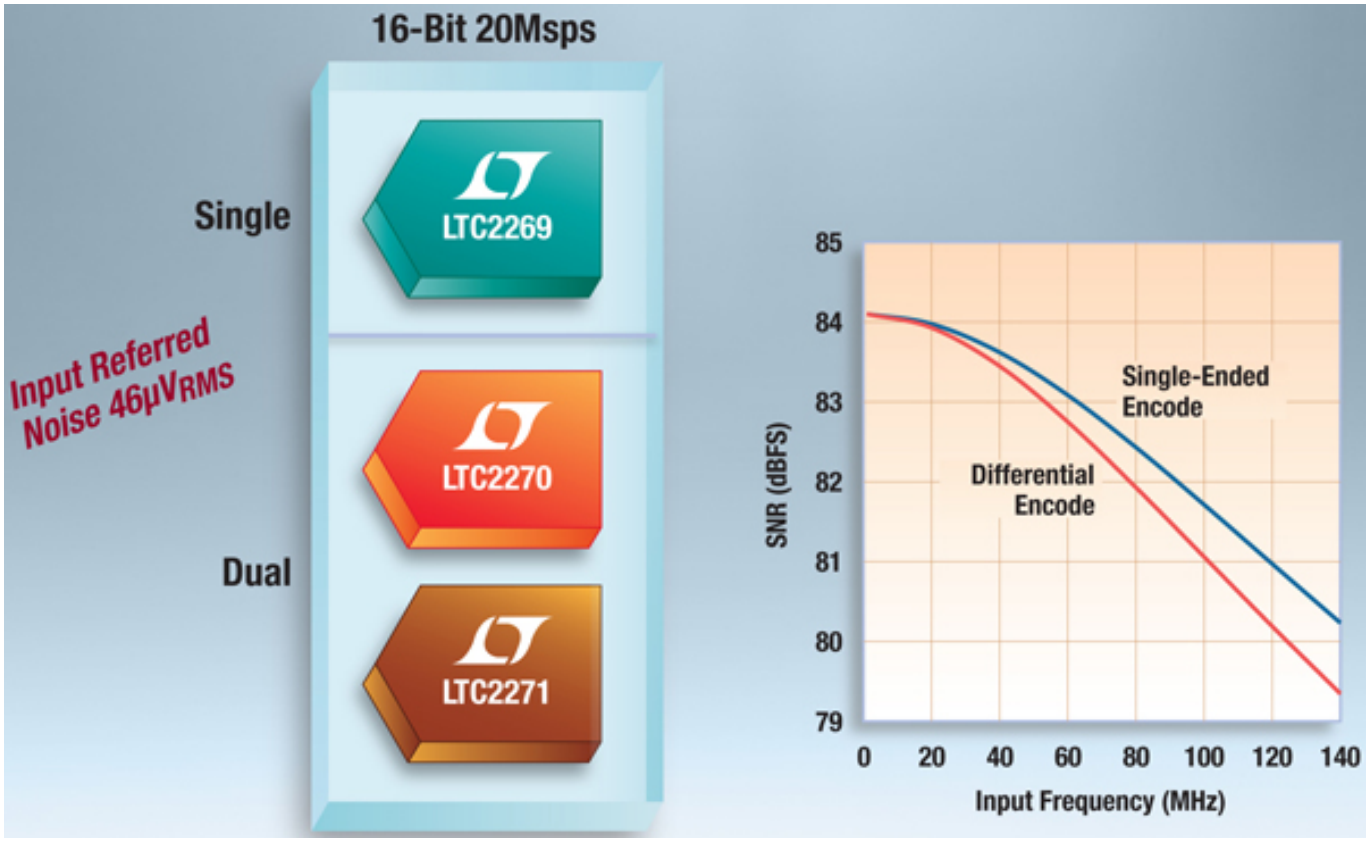
16-Bit 20Msps ADCs achieve 84dB SNR & 46 microvolt (RMS) input-referred noise

Linear Technology Corporation introduces three low power 16-bit, 20Msps analog-to-digital converters (ADCs), the LTC2269 [1], LTC2270 [2] and LTC2271 [3], offering the lowest input-referred noise and tight integral nonlinearity error (INL) for very high precision DC measurements. With only 46µV_{RMS} input noise and maximum guaranteed INL error of ±2.3LSB, these ADCs are suitable for very low noise, high linearity sampling applications such as digital x-ray, infrared and medical imaging, pachymeters, spectrometry and cytometry. These devices achieve signal-to-noise ratio (SNR) performance of 84dB and SFDR of 99dB at baseband. High AC performance and low noise is achieved using a well designed 2.1Vp-p front end, which also significantly lowers the power required by the ADC driver circuitry. The ADCs themselves consume approximately 80mW/channel. Further power savings can be achieved by placing the devices in standby (12mW) or shutdown (0.5mW), making them ideal for handheld test and measurement applications.



The LTC2269 and LTC2270 are single-channel and two-channel simultaneous sampling parallel ADCs, respectively, offering a choice of full-rate CMOS, or double data rate (DDR) CMOS/LVDS digital outputs with programmable digital output timing, programmable LVDS output current and optional LVDS output termination. The LTC2271 includes two-channel, simultaneous sampling ADCs with serial LVDS outputs. They include Linear Technology’s digital output randomizer and alternate

bit polarity (ABP) mode that minimize digital feedback in the application.

These low power 16-bit ADCs provide a pin-compatible upgrade to the existing LTC2160, LTC2180, LTC2190 families of 25Msps to 125Msps 1.8V low power ADCs. Available in compact QFN packages, designers can benefit from the flexible choice of interfaces to minimize pin count and ease routing to FPGAs. These ADCs are now in production, with evaluation boards and samples available online or from your local Linear Technology sales office. Pricing starts at $30.00 each for the single LTC2269 device in 1,000-piece quantities. The complete product family can be found at: www.linear.com/HSADC [4].

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Links:
[1] http://r20.rs6.net/tn.jsp?e=001GcsumUXLkc2ymnER22s0dqs0y6mn5zaXU6vD2g86BZDi4W5yb8Il1ktAvMljD1T_SKJ7ruQJm7posbb_zPSui5flNYSG-1nORDPzPCf5OLP_TLrGWA-iy2bKPwE_JY_o75uckGm7D3s=
[2] http://r20.rs6.net/tn.jsp?e=001GcsumUXLkc1jCC9kyLnEoKxkE8XN1JttmBqALI10sarb6sLFjBr90KSUgPCCl1xtb69I-bKHxywgewPbFJ-PvG1_QT0Ds2DsFzGJulKKpDp9KNDZno51gaxzXRPAyWePm01xH2nME_g=
[3] http://r20.rs6.net/tn.jsp?e=001GcsumUXLkc0S0OLyyGz7wlYCc-STPGoOqQ903Mx7tg2d4jiABdBRWS2adMEs26HohygI_wMKvyGniF0PAxiq-PMQuGa77C87nNB9_H5NNFbyknaUXMsYjHf06CkV9p7KRZ7VFbe6OPQ=
[4] http://r20.rs6.net/tn.jsp?e=001GcsumUXLkc307qPgwkT8xFxq3Z0naCfYmZ5f-VjqEvxx3OYF4hEN2w31x9V5pvyr9aDr--MxVY2z1Nh-S7kZxX80ycaO3bR-EuD5CyE_WnFLrU4gjiFYaw==