

Testing ADC Knowledge Evaluation

If you miss more than 3, you are a good candidate for the One Day ADC Tutorial

1. How many measurable code widths does a 10-bit ADC have?
 - a. 1024
 - b. 1023
 - c. 1022
 - d. 1021

2. Which type of ADC requires a sample-and-hold circuit at its input?
 - a. SAR
 - b. Flash
 - c. Sigma-Delta
 - d. Pipelined

3. Which ADC parameter does quantization error affect most?
 - a. Total Harmonic Distortion
 - b. Signal-to-Noise Ratio
 - c. Gain
 - d. Spurious-Free Dynamic Range

4. Noise shaping is:
 - a. An effect seen with flash ADCs
 - b. An effect seen with SAR ADCs
 - c. An effect seen with all types of ADCs
 - d. An effect seen with sigma-delta ADCs

5. If an ADC has “no missing codes”, its DNL is guaranteed better than:
 - a. ± 0.5 LSB
 - b. ± 1.0 LSB
 - c. ± 1.5 LSB
 - d. ± 2.0 LSB

6. What advantage does a servo loop have over a ramp generator for ADC linearity testing?
 - a. It is a faster method
 - b. It requires no special hardware
 - c. It is a more accurate method
 - d. It produces a lower distortion sinusoid

7. What is the primary disadvantage of using the normal histogram method for ADC linearity testing?
 - a. It does not find DNL values
 - b. It does not find sparkle codes
 - c. It does not find INL values
 - d. It does not find THD values

8. Which formula best describes the frequencies at which Intermodulation Distortion appears?
- a. $m * F_1 \pm n * F_2$
 - b. $F_1 \pm F_2$
 - c. $m * F_1 + n * F_2$
 - d. $F_1 \pm n * F_2$
9. What is the “Effective Number of Bits” for an ADC?
- a. The resolution of the device
 - b. The resolution of the device minus its measured INL value
 - c. A calculation that relates SNR and linearity
 - d. A measurement that relates THD and linearity
10. What is the dynamic range of a 16-bit ADC?
- a. 32dB
 - b. 65535dB
 - c. 16dB
 - d. 96dB

To check your answers please visit our web site – the direct link is

http://www.soft-test.com/ad_converters/answers.htm