











# AD6640

## DEFINITION OF SPECIFICATIONS

### Analog Bandwidth (Small Signal)

The analog input frequency at which the spectral power of the fundamental frequency (as determined by the FFT analysis) is reduced by 3 dB.

### Aperture Delay

The delay between a differential crossing of ENCODE and ENCODE and the instant at which the analog input is sampled.

### Aperture Uncertainty (Jitter)

The sample-to-sample variation in aperture delay.

### Differential Nonlinearity

The deviation of any code from an ideal 1 LSB step.

### Encode Pulsewidth/Duty Cycle

Pulsewidth high is the minimum amount of time that the ENCODE pulse should be left in Logic “1” state to achieve rated performance; pulsewidth low is the minimum time ENCODE pulse should be left in low state. At a given clock rate, these specifications define an acceptable ENCODE duty cycle.

### Integral Nonlinearity

The deviation of the transfer function from a reference line measured in fractions of 1 LSB using a “best straight line” determined by a least square curve fit.

### Minimum Conversion Rate

The ENCODE rate at which the SNR of the lowest analog signal frequency drops by no more than 3 dB below the guaranteed limit.

### Maximum Conversion Rate

The ENCODE rate at which parametric testing is performed.

### Output Propagation Delay

The delay between a differential crossing of ENCODE and ENCODE and the time when all output data bits are within valid logic levels.

### Power Supply Rejection Ratio

The ratio of a change in input offset voltage to a change in power supply voltage.

### Signal-to-Noise-and-Distortion (SINAD)

The ratio of the rms signal amplitude (set at 1 dB below full scale) to the rms value of the sum of all other spectral components, including harmonics but excluding dc.

### Signal-to-Noise Ratio (SNR)

The ratio of the rms signal amplitude (set at 1 dB below full scale) to the rms value of the sum of all other spectral components, excluding the first five harmonics and dc.

### Spurious-Free Dynamic Range (SFDR)

The ratio of the rms signal amplitude to the rms value of the peak spurious spectral component. The peak spurious component may or may not be a harmonic. May be reported in dBc (i.e., degrades as signal levels is lowered), or in dBFS (always related back to converter full scale).

### Two-Tone Intermodulation Distortion Rejection

The ratio of the rms value of either input tone to the rms value of the worst third order intermodulation product; reported in dBc.

### Two-Tone SFDR

The ratio of the rms value of either input tone to the rms value of the peak spurious component. The peak spurious component may or may not be an IMD product. May be reported in dBc (i.e., degrades as signal levels are lowered) or in dBFS (always related back to converter full scale).

### Worst Harmonic

The ratio of the rms signal amplitude to the rms value of the worst harmonic component, reported in dBc.







































