The Oscillator Specification Sheet

Carrier Frequency

Generally specified in Hertz (Hz).

Carrier Power

Generally specified in dBm for low-power oscillators, Watts for high-power oscillators.

Typical values for "small-signal" oscillators are 5 to 20 dBm (hey, the same values as for mixer LO drive power—what a coincidence!).

Stability

Specified in ppm over the temperature range of the device (e.g., -25° C to 85° C).

Phase Noise

Specified in dBc/Hz at some specific frequency from the carrier.

e.g., -80 dBc/Hz at 1 kHz from f_0

Frequency Pushing

Expressed in units of *Hz/V* or *Hz/mV*. Can be either a positive or a negative number.

Frequency Pulling

Specified as the maximum frequency shift from nominal frequency ω_0, due to some worst-case load (expressed in VSWR, return loss, etc.).

Harmonics and Spurs

Specified as the power of the largest spurious and/or harmonic signal, typically in terms dBc (e.g., < -50 dBc).

Noise

This is the thermal noise (as opposed to phase noise) at the output of the oscillator. It is specified in terms of its **spectral power density**, assumed to be constant value in Watts/Hz.

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