Abstracts

A New Measurement Approach for Phase Noise at Close-In Offset Frequencies of Free-Running Oscillators (1996 Vol. III [MWSYM])

X. Zhang and B.J. Rizzi. "A New Measurement Approach for Phase Noise at Close-In Offset Frequencies of Free-Running Oscillators (1996 Vol. III [MWSYM])." 1996 MTT-S International Microwave Symposium Digest 96.3 (1996 Vol. III [MWSYM]): 1679-1682.

Measuring the phase noise of low Q free-running oscillators at close-in offset frequencies from carrier (<10KHZ) is usually difficult using conventional measurement methods due to the oscillators frequency instability. To solve this problem, a new measurement technique has been developed as a practical alternative for quick and accurate phase noise measurements without the use of expensive equipment. The injection locking technique is used to stabilize the free-running oscillator with a clean reference source, thus the phase noise can be down-converted and measured by a signal analyzer at base-band. The phase noise of a 9.3 GHz voltage control oscillator (VCO) has been tested to verify the new approach, and the measurement results agree very well with those obtained using an HP phase noise analyzer.

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