

Keywords: rf, rfics, vco, phase noise, frequency, offset, wireless, wlan, varactor, IF, voltage controlled oscillator, rfics, rf ics, VCOs

APPLICATION NOTE 2870

MAX2605/MAX2606/MAX2608/MAX2609 VCO Phase Noise Measurements

Nov 21, 2003

Abstract: Phase noise performance is measured and presented for Maxim's IF voltage-controlled oscillators (VCOs). The phase noise of the VCOs tested rolled-off at 20dB/decade between 10kHz and 1MHz offset. All measurements were taken with Maxim Evaluation kits. $V_{CC} = +2.75V$, $T_A = +25^{\circ}C$, and $V_{TUNE} = 1.4V$.

The MAX2605-MAX2609 are compact, high-performance intermediate-frequency (IF) voltage-controlled-oscillators (VCOs) designed specifically for demanding portable wireless communication systems. They combine monolithic construction with low-noise, low-power operation in a tiny 6-pin SOT23 package. These low-noise VCOs feature an on-chip varactor and feedback capacitors that eliminate the need for external tuning elements, making the MAX2605-MAX2609 ideal for portable systems.

This application note describes phase-noise measurements performed on these parts, using Maxim Evaluation kits. $V_{CC} = +2.75V$, $T_A = +25^{\circ}C$, and $V_{TUNE} = 1.4V$.



[Click here for an overview of the wireless components used in a typical radio transceiver.](#)

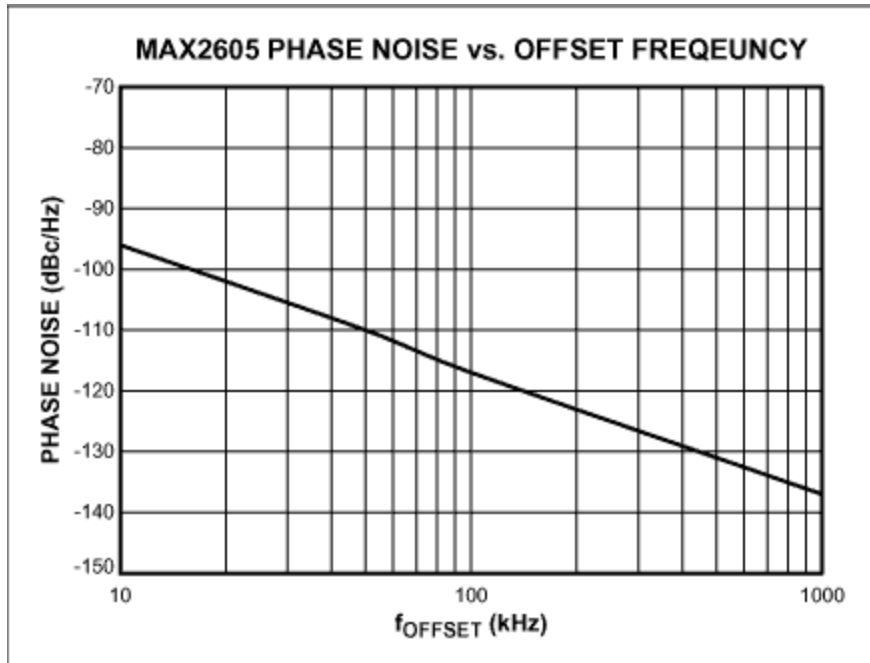


Figure 1.

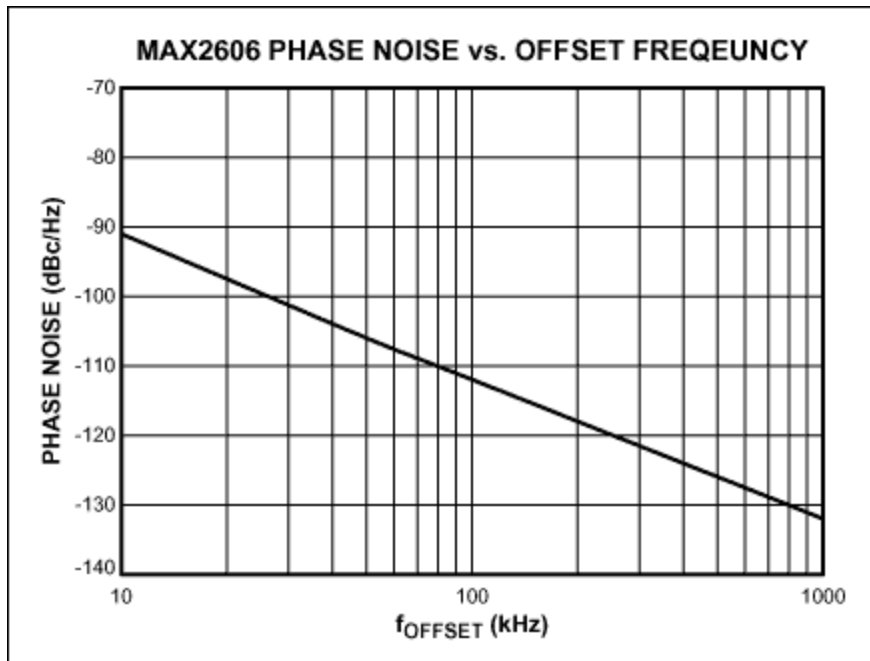


Figure 2.

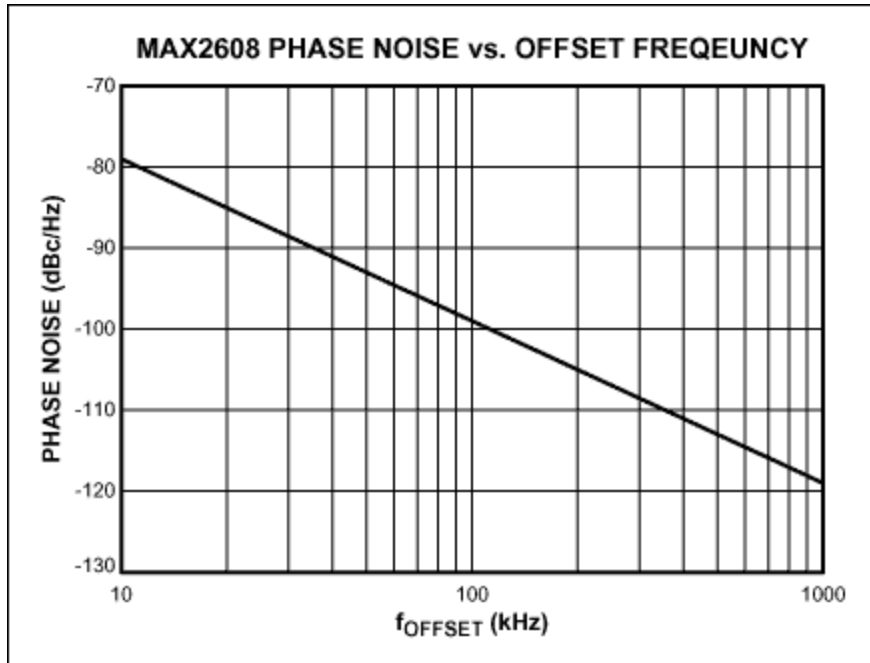


Figure 3.

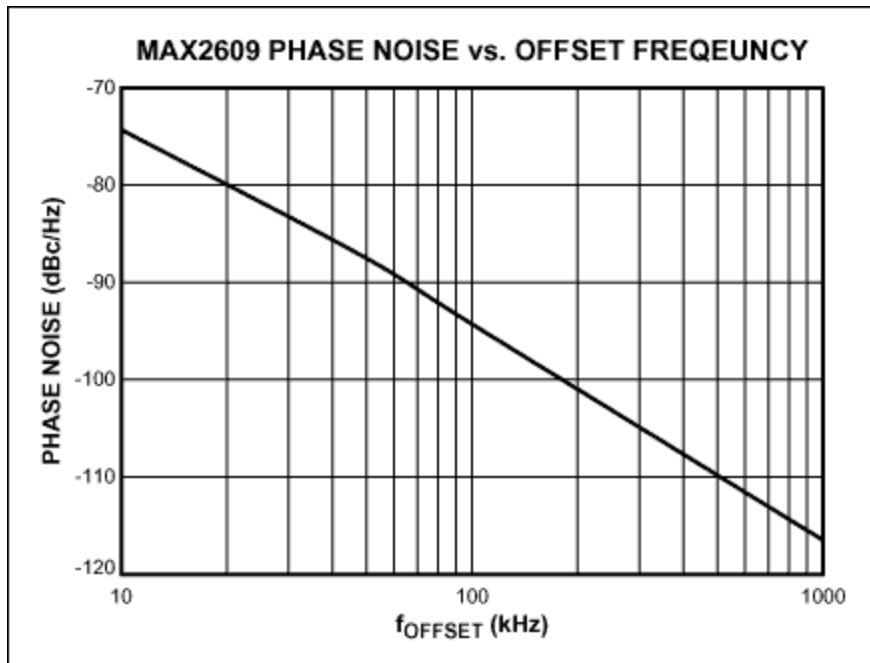


Figure 4.

Note that in each graph presented, the phase noise follows the expected 20dB per decade roll-off. The MAX2607 was not measured for this application note, so a graph was not prepared. Expect the phase noise of the MAX2607 to follow the same roll-off exhibited by all the VCOs in this family.

Related Parts

MAX2605	45MHz to 650MHz, Integrated IF VCOs with Differential Output	Free Samples
MAX2606	45MHz to 650MHz, Integrated IF VCOs with Differential Output	Free Samples
MAX2608	45MHz to 650MHz, Integrated IF VCOs with Differential Output	Free Samples
MAX2609	45MHz to 650MHz, Integrated IF VCOs with Differential Output	

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