Pletronics, Inc.
Manufacturer of High Quality Frequency Control Products
19013 36th Avenue West, Lynnwood, WA 98036 USA
p: 425.776.1880, f: 425.776.2760, www.pletronics.com

ISO 9001
FM38119

Pletronics fundamental and 3rd overtone crystal oscillators outperform PLL-based and MEMS oscillators.

In today's market – with faster device speeds, higher data rates, and increased reliability requirements, phase noise as a design consideration is taking an ever more central role in telecommunications and electronics. The narrow timing margins faced by design engineers require that they pay close attention to the phase noise performance of each of the components in their application.

Conventional quartz based products using fundamental and 3rd overtone quartz resonators offer superior performance at competitive prices when compared to PLL and MEMS based devices. Continuous improvements in IC's and in crystal oscillator manufacturing methods have enabled this time-tested clocking technology to remain well ahead of other clocking technologies in terms of overall performance, and lower phase noise.

Phase noise refers to the signal stability in the frequency domain and Jitter refers to the signal stability in the time domain. One of the most accurate methods to obtain RMS jitter is to measure the phase noise (spectral density of a signal's phase deviation) and integrate over a given frequency offset from the carrier. The phase instability is then converted to the time domain to give jitter.

PLL's add additional functions to the frequency chain as well as often adding discrete spurious and multimodal non-Gaussian distributions to the phase noise. This results in poor overall jitter performance. MEM's resonators have substantially lower Q (Quality factor) than quartz resonators which results in "spreading" of the spectral density and higher resulting phase noise and jitter. These effects can be readily seen in the phase noise plot below.

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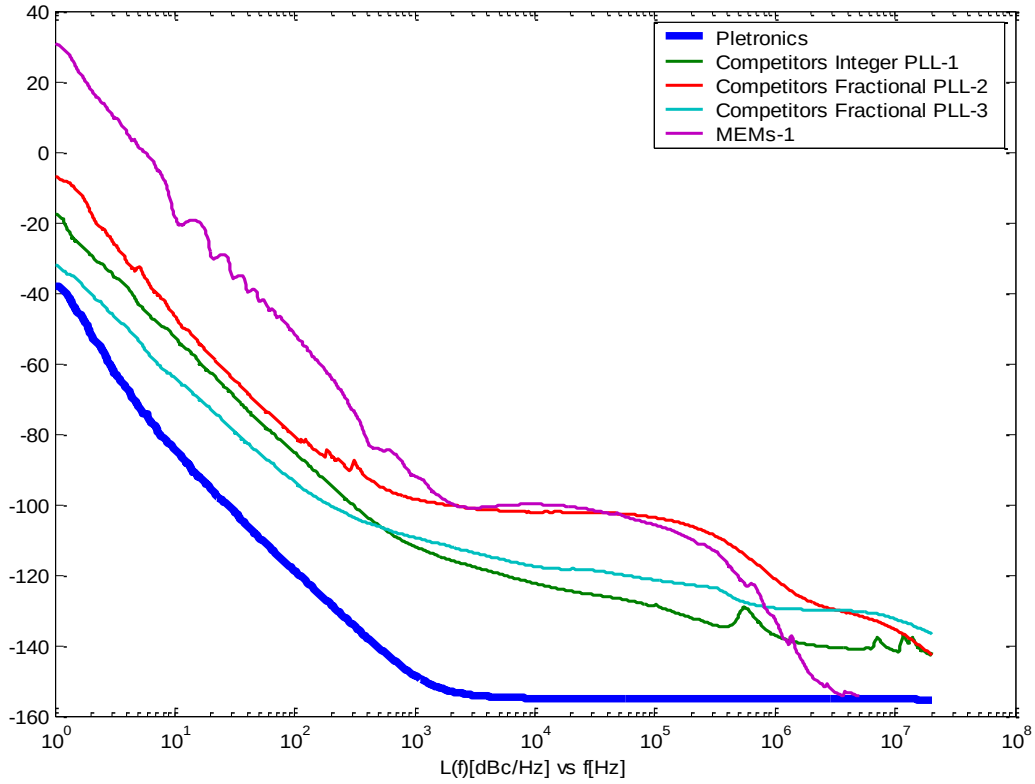
Phase Noise Comparison Pletronics vs Competitors PLL/MEMs



Test Data
The tests for the parts shown in this chart were conducted by Pletronics using an Agilent E5052B Signal Source Analyzer. Competitors' parts were obtained from commercially available electronics distribution sources.

Parts tested were ~100MHz and PECL/LVDS logic type.

About Pletronics
Founded in 1979, Pletronics, Inc. sought to distinguish itself as a leader in the development of new frequency control products. Over the years, Pletronics has introduced a number of "firsts" that have been widely adopted by industry. Today, Pletronics offers a wide variety of frequency control products, including crystal oscillators, OCXO's, TCXO's, and VCXO's. The exclusive OeXO's® provide the accuracy and precision of OCXO's in smaller packages, at lower prices, and with faster start-up times.

A minority owned business, Pletronics serves leading OEMs and CEMs worldwide. In addition to innovative engineering, we have earned a reputation for consistent high quality, responsive customer service and support, and competitive prices.