

Dear **C Wonnacott**

QUARTZLOCK NEWSLETTER ~ Spring 2012

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1. A circle of power, mass & volume saving with SMAC Rubidium

Quartzlock's decades of experience in Rubidium Oscillator technology reaps big physical & electrical savings in the latest Sub Miniature Atomic Clock (SMAC). Major design advances solves remote & portable frequency control at high performance levels, where power, mass & volume are at a premium. 50% reduction in power consumption in complex oscillator design, benefits remote, infrastructure & portable applications.

A Columbian Waveguide cavity is at the heart of SMAC design with the latest Ultra Low Noise synthesizer, DAC, ADC & MCC to enable both significant power and mass reduction for the advanced physics package. Higher resolution control of "C" field, cavity/cell temperature, lamp power & temperature plus other parametric.

Two additional problems are solved, size & lock time: miniaturization to an OCXO size 2"x2"x1" (50 x 50 x 25mm) and a very fast lock time of 1 minute, saving some 80% of this higher energy warm time.

No compromise in the 10MHz, +7dBm output level as compared to larger LPRO & MRO Rubidium oscillators. Low Distortion: 40dBc (typically 50dBc) Harmonics, Low Spuri: 80dBc, stability (AVAR) of $4 \times 10^{-12}/100s$ and Phase Noise of -130dBc@100Hz offset. Mass is just 150g compared to 750g for the LPRO. Even the cost is some 50% lower solving budget issues.

Design-in for 2012+ Defense, Marine C4 timing, remote TV repeater, Cell site, wired telecom infrastructure, portable wireless test instrumentation and bench/system synchronization will all benefit from this tiny, SMAC Atomic Clock's economies at such high performance levels.

These savings enable Atomic clock stability and $4 \times 10^{-10}/pa$ drift, to be used in completely new applications.

New designs will have the enhanced specifications for frequency control over quartz oscillators for similar cost, size, mass & consumption.

2. Newsletter sign up

We'd like to send you occasional email newsletters with items of interest to the time and frequency community, press releases and new product information. To request the newsletter [please sign up here](#). We will not send more than 1 newsletter a month on average.

Kind regards

Quartzlock