Family of Atomic Oscillators with Advanced Rubidium Clock Optimized for 4G/LTE

Symmetricom, [1] a worldwide leader in precision time and frequency technologies, today announced that is has developed a high-performance Rubidium atomic clock for 4G/LTE mobile network equipment. The SA.32m [2] enables base station designs for holdover of +/-1.5 microseconds for up to 24 hours, so that networks remain synchronized even if primary synchronization sources are unavailable.

“Holdover is a key factor in assuring network performance especially for 4G/LTE deployments. Rubidium, in particular, is able to provide incredibly high levels of accuracy. Symmetricom’s compact low-power solution makes it a viable option for operators as they look to increase network efficiency in next-generation deployments,” said Glen Hunt, principal analyst, Current Analysis.

With 4G/LTE network demands, synchronization accuracy is increasingly important for operators to deliver uninterrupted end-user services. LTE base stations must deliver advanced services and need synchronization with other base stations at all times. A holdover oscillator in base stations is an ideal way to protect against service disruption that could occur during a temporary loss of the GPS signal or when a network-based sync signal is not available.

Primary characteristics of the SA.32m Rubidium Atomic Clock [2] optimized for LTE equipment, include:

- **Holdover:** +/-1.5 microseconds for up to 24 hours
- **Aging rate:** 1E-10 per month
- **Temperature stability:** 1E-10 over full operating temp range
- **Power consumption:** 5 watts at 25 °C steady state
- **Stability:** 100 second Allan Variance of 1E-11
- **Package Size:** 2 x 2 x 0.7 inches

“Rubidium is recognized for delivery of precise holdover in thousands of CDMA base stations deployed worldwide,” said Manish Gupta, vice president of marketing for Symmetricom. “LTE has even more stringent synchronization requirements and the

SA.32m is ideally suited to support 24 hours of phase holdover in LTE macro base stations. Furthermore, the SA.32m is available at prices substantially below previous generation of Rubidium atomic clocks."

The Quantum SA.32m high performance clock further enhances Symmetricom's embedded solution portfolio which was also announced today with the introduction of the SCi 2000 rel. 2.0 SoftClock. For more on both products, please visit:

http://www.symmetricom.com/products/frequency-references/rubidium-frequency-standard/SA.32m/ [2]

http://www.symmetricom.com/products/ieee-1588-ptp-solutions/ptp-clients/SCi-2000-Embedded-Software-Clock/ [3]

Symmetricom's Quantum family of oscillators bring atomic accuracy, small form factor, and reduced power consumption to a broad range of applications. For more information on Symmetricom's Quantum family including miniature atomic clocks with Rubidium such as the SA.32m, please visit:

http://www.symmetricom.com/products/quantum-atomic-oscillators/ [4]

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