



MtronPTI Increases Capacity for Mobile and Airborne Internet

Best-in-class master reference for lab instruments and satellite communication

Orlando, FL, December 17, 2014 – MtronPTI, leader in precision frequency control, custom RF/microwave filters and solid state RF power amplifiers, today announced the XO5123 Series Ultra-low Phase Noise OCXO to meet the needs of increasing internet bandwidth. Conrad Jordan, MtronPTI VP and Timing Business Unit Manager, says, “As digital bandwidth requirements raise – more people, more video traffic, internet anywhere – LTE and satellite equipment makers turn to higher frequencies and more complex modulations. But these shifts mean the *primary frequency reference* needs to be quieter. The 10 MHz XO5123 lowers phase noise to -146 dB/Hz at 10 Hz offset and -172 dB/Hz at high frequencies. Nearly fifty years of crystal science and high performance oscillator design helps our clients make better LTE lab measurements and broaden Internet access.”

Digital communication systems, the one that powers your phone or the one that connects the internet on a commercial flight, use high frequency radio signals, many channels and complex modulation schemes. In the face of increasing data transport needs, equipment makers are moving carrier frequencies up (allowing more channels of the same bandwidth) and changing modulation to fit more bits into the same channel. One common modulation scheme involves 256 combinations of phase and amplitude – each choice represents a small group of digital ‘bits’. To increase the number of bits per second, radio makers are moving to 1024 or 2048 point schemes. These points are closer together so measurement errors must go down to keep the same level of data reliability.

Conrad continues, “The performance limit of an LTE lab network analyzer or an airborne satellite receiver is limited by the *reference clock* noise level. The XO5123 brings very low phase noise, bringing bench equipment higher accuracy and also adds low aging to ensure uninterrupted airborne Internet service.”

MtronPTI’s [XO5123 Series](#) is shipping now in a small ‘Europack’ 36 x 27 mm package with three phase noise level options. Consuming only 2.5 Watts, aging of $<\pm 0.1$ ppm/year and with an Allan deviation down to 5×10^{-12} , the XO5123’s in-house crystal manufacture and extensive characterization over temperature, shock and vibration help make measurements a bit more accurate, data links more reliable and radar pictures a bit sharper.

OCXO – **O**ven **C**ontrolled **C**rystal **O**scillator: a quartz time and frequency reference encased in a temperature stabilized oven to guarantee initial accuracy, minimal shift with ambient temperature changes and low drift over time. *Low Phase Noise* OCXOs use selected specially processed crystals with fewer microscopic faults, special mechanical mounts and lower noise electronics to minimize output noise.

About MtronPTI

MtronPTI is an AS9100 rev C certified designer and manufacturer of advanced highly engineered frequency control, filter and RF amplifier products for aerospace, defense, instrumentation and Internet communication applications. Based in Orlando, Florida, with design, sales and manufacturing locations in North America, Asia and Europe, MtronPTI is a subsidiary of The LGL Group (NYSE MKT: LGL). For more information, visit <http://www.mtronpti.com> and <http://www.lglgroup.com>.

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