



Q-Tech's QT2021 Series MCXO Crystal Oscillators Deliver OCXO-Level Stability and High Radiation Tolerance

Model QT2021 Series microcomputer-compensated crystal oscillators (MCXOs) deliver superior size, weight, and power over comparable oven-controlled devices for space applications.

Cypress, CA—October 31, 2023—[Q-Tech Corporation](#), a US-based leading supplier of space-qualified crystal oscillators, announces the introduction of the [QT2021 Series](#) microcomputer compensated crystal oscillators (MCXOs). These new devices provide exceptional OCXO-level temperature stability (up to ± 20 ppb over -40°C to $+85^{\circ}\text{C}$) while consuming a maximum of 90mW—thirty orders of magnitude lower than comparable OCXOs. Key features of the QT2021 Series are radiation tolerance to 50kRad(Si) TID, single event latch-up (SEL) of $75\text{MeV}\cdot\text{cm}^2/\text{mg}$ (min) and high shock and vibration tolerance with G-sensitivity of 1ppb/g. The QT2021 small form-factor package weighs just 50g, vs. comparable oven-controlled (OCXO) units weighing 100g or more. This significant improvement in size, weight, and power (SWaP) offers a highly preferable option for a wide array of advanced, and demanding space applications.



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Q-Tech's QT2021 microcomputer compensated crystal oscillator (MCXO) uses a high-stability overtone SC-cut crystal with microprocessor-controlled compensation. The self-temperature sensing resonator, using a dual-mode oscillator, virtually eliminates thermometry-related errors, resulting in OCXO-level stability.

“When MCXOs were first developed in the early 2000s, space- and rad hard-level digital components were very costly, which meant an MCXO space-level product would be prohibitively expensive,” said Scott Sentz, Q-Tech's Director of Marketing and Sales. “Applying our engineering expertise and by utilizing advanced microcontrollers and other digital devices that are rad tolerant, Q-Tech has broken the barrier of space limitations for MCXOs.”

The series is offered with standard frequencies of 10, 20, 30, 40, 50, 60 and 80MHz, with either CMOS or Sine Wave logic outputs with low phase noise and jitter.

Price (Production Quantities): **Contact Factory**
Lead Time: **Contact Factory**

About Q-Tech

[Q-Tech Corporation](#) was founded in 1972 with the objective of providing state-of-the-art crystal clock oscillators and frequency control solutions for companies with demanding applications. As the leading U.S. manufacturer of qualified products to MIL-PRF-55310 as well as ultra-high reliability standards such as Aerospace Corporation TOR (GPS III) and NASA GSFC specifications, Q-Tech proudly services the military, aerospace, down-hole and deep space industries. Q-Tech is certified to the AS9100 and ISO 9001 Quality Management Systems. The Company maintains a global presence with sales capabilities throughout North America, Europe, and Asia.

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