

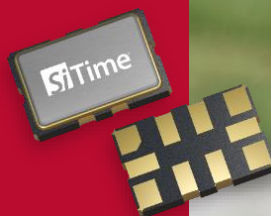
± 100 ppb stability from -40 to 105°C

Low phase noise

0.01 ppb/g acceleration sensitivity

$5.0 \times 3.2 \text{ mm}^2$ footprint compatible

Unmatched ease-of-use



From sensors to military communications and electronic defense applications, compact and robust RF systems are critical to successful military operations. The local oscillator is at the heart of RF systems. However, oscillators can be a weak link in the system if they don't perform in the harsh conditions experienced by military equipment. Endura™ Ruggedized Low Phase Noise Super-TCXOs deliver the robustness and reliability of silicon MEMS timing for RF systems. In addition to ultra-low g-sensitivity, the Super-TCXO phase noise is virtually insensitive to vibration. With a frequency stability across temperature of ± 100 ppb, these Super-TCXOs can replace a quartz OXCO, reducing power consumption by 50% and size by 95%.

Benefits

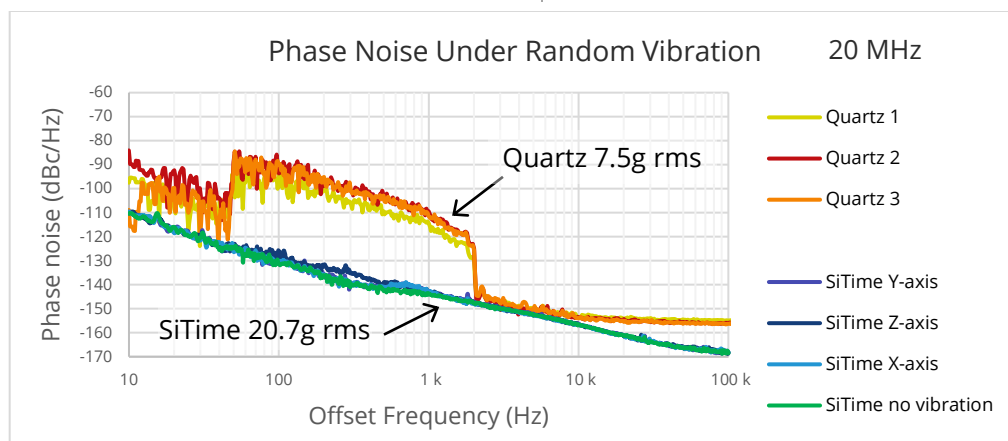
- Combines excellent frequency stability over temperature, low phase noise and low g-sensitivity in a single ruggedized device, eliminating the need for 2 separate single-purpose devices
- Simplify and expedite design and manufacturing by eliminating placement constraints and shielding requirements in aerospace and defense applications.

Applications

- RF up and down converters
- Ruggedized radios
- Data links
- Telemetry
- RF sensors
- GPS, GNSS receivers
- Satellite user terminal
- Electronic defense
- Military, defense, space, avionics systems

Features

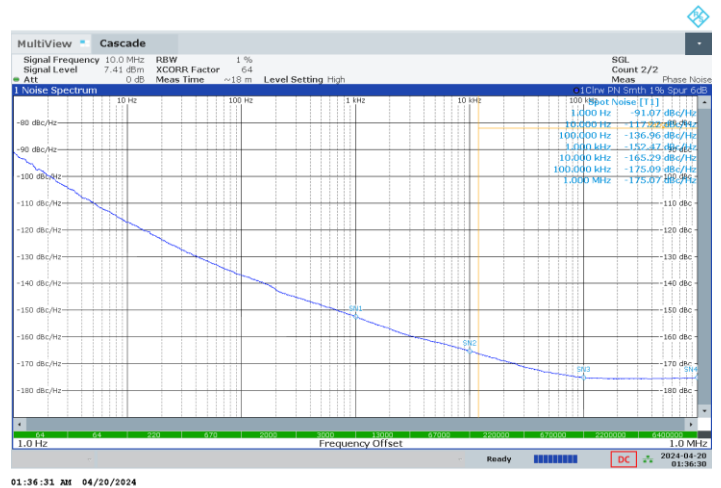
- Any frequency from 10 MHz to 220 MHz
- 0.01 ppb/g acceleration sensitivity
- ± 100 ppb frequency stability across temperature
- -40°C to $+105^{\circ}\text{C}$ operating temperature
- 159 dBc/Hz at 10 kHz offset (20MHz carrier)
- 172 dBc/Hz broadband phase noise (20 MHz carrier)
- Low phase noise suitable for most RF applications
- ± 1 ppb/ $^{\circ}\text{C}$ typical frequency slope (dF/dT)
- $1\text{e-}11$ ADEV at 1 to 10 seconds averaging time
- $5.0 \times 3.2 \text{ mm}^2$ footprint compatible
- 1.8 V to 3.3 V supply voltage



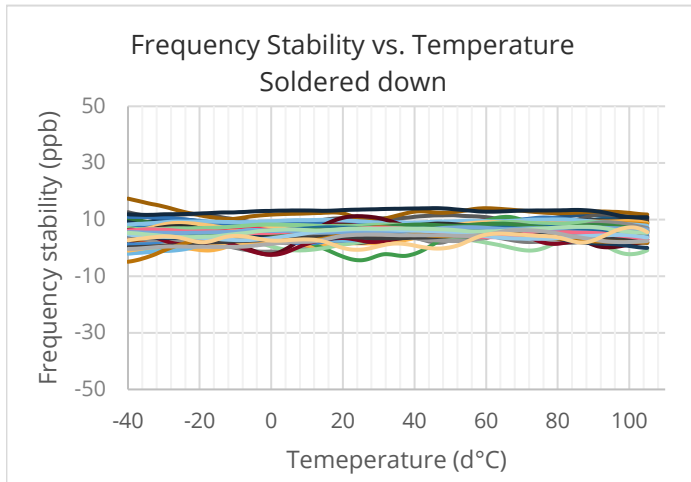
Additional features

- Factory programmable options for short lead time
- Best dynamic stability under airflow and thermal shock
- No activity dips or micro jumps
- Resistant to shock, vibration, and board bending
- On-chip regulators eliminate the need for external LDOs
- Low sensitivity to EMI
- Digital frequency pulling (DCTCXO) via I2C/SPI
- Up to ± 400 ppm pull range
- Frequency pull resolution down to 0.05 ppt (5×10^{-14})
- LVCMOS or clipped sinewave output

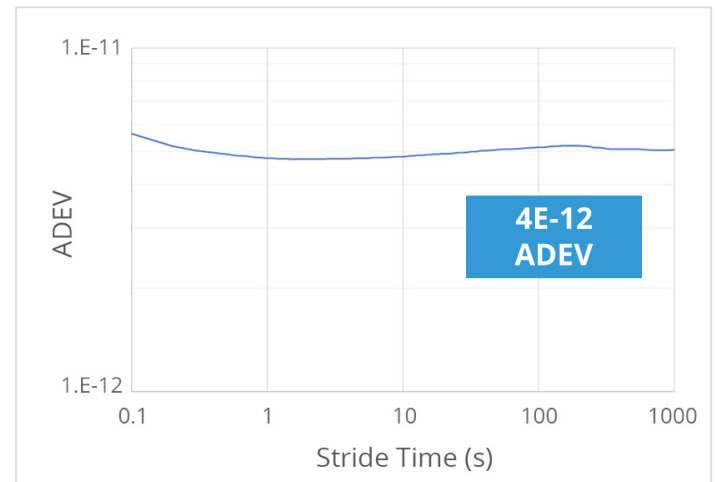
10 MHz Phase Noise



Frequency Stability



Allan Deviation



Device*	Frequency (MHz)	Freq Stability over Temp (ppb)	Temp. Range (°C)	Allen Deviation	Supply Voltage (V)	Package (mm x mm)	Digital Control
SiT7201	10 to 60	±100 ppb ±200 ppb ±250 ppb	-40 to 105	1E-11, 1 to 10 sec	1.8 to 3.3	5.0 x 3.5	I ² C, SPI
SiT7202	60 to 220						

SiTime is the precision timing company. We combine innovative MEMS and programmable analog technologies with our systems expertise to design industry-best products that overcome the limitations of legacy quartz products. Our configurable products provide ultra-stable timing that enables customers to differentiate their systems with higher performance, smaller size, and better reliability.