Emerald OCXOs

for Precision Time Synchronization

±5 ppb stability, ±40 ppt/°C ΔF/ΔT

Smallest in class, 9 x 7 mm^2

Unmatched ease-of-use

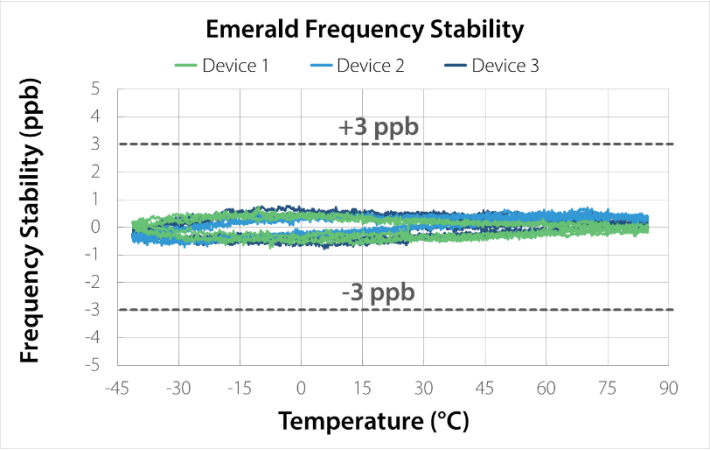
SiTime's Emerald Platform™ Stratum 3E OCXOs and Digitally Controlled OCXOs are designed to solve the long-standing problems of quartz OCXOs, which are sensitive to environmental conditions, require protective components, and are difficult to use. Emerald OCXOs provide the best dynamic performance (under airflow, thermal shock, vibration, shock, and EMI), programmability for the shortest lead time, and the smallest size in its class. The Emerald Platform™ also includes the industry's only fully digitally controlled OCXO, offering class leading performance with frequency control at an ultra-fine resolution.

Benefits

- Enhance system robustness/performance in harsh environments
- Reduce design/manufacturing overhead by eliminating placement constraints and shielding requirements
- Shrink system size with smallest Stratum 3E OCXO package, fewer supporting components
- Minimize time error in time synchronization applications

Applications

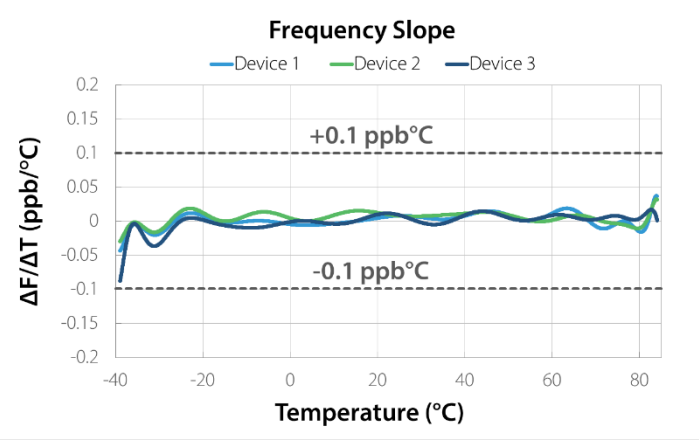
- SONET/SDH Stratum 3E
- 4G/5G RRH, DU
- IEEE 1588 Boundary Clocks and Grandmasters
- Macro Base Stations
- Carrier Class Routers
- Optical Transport
- Digital Switching
- Test Instrumentation
- Synchronous Ethernet

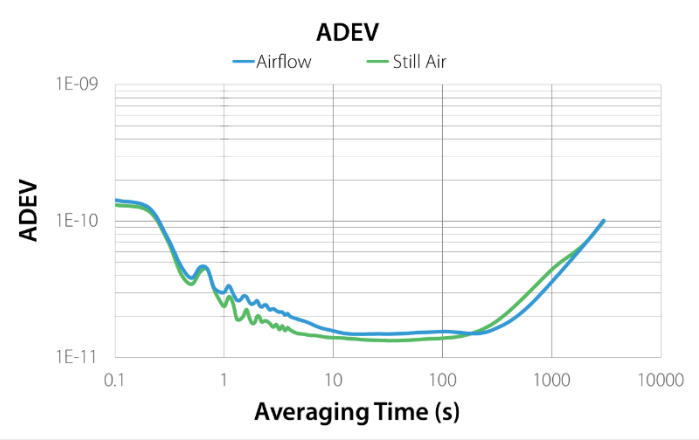


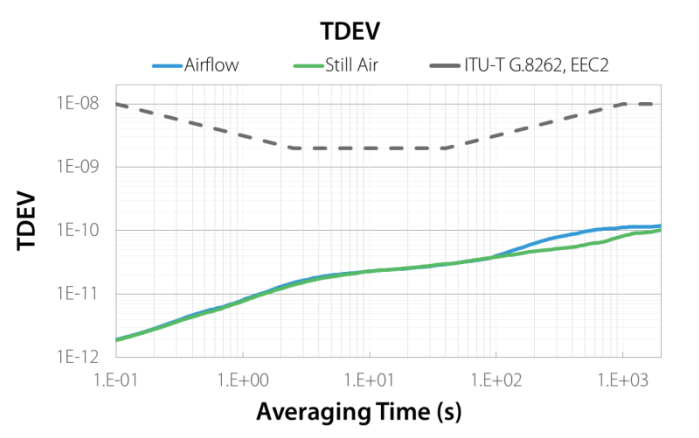
Features

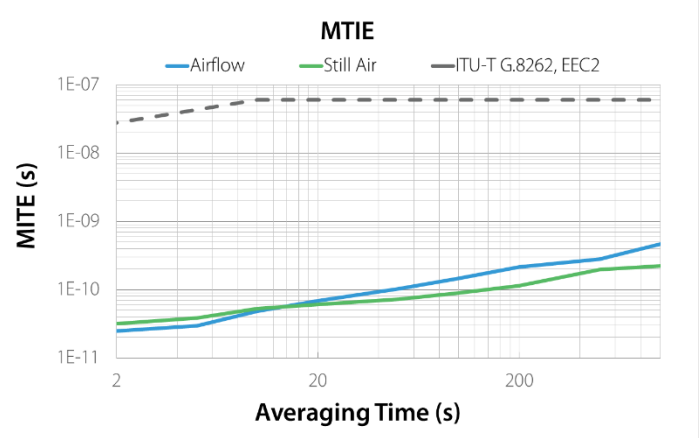
- Exceptional dynamic stability under airflow, fast temp ramp
  - ±5 to ±8 ppb over-temp stability
  - ±40 ppt/°C frequency slope (ΔF/ΔT)
  - 2e-11 ADEV at 10 seconds averaging time, under airflow
  - 0.1 ppb/*g* vibration, for outdoor pole mounted equipment
  - Resistant to microphonic and/or board bending effects
- ±0.3 ppb daily aging
- Fully digital I^2C frequency tuning, ±5 ppt pulling resolution
- On-chip regulators for power supply noise filtering
- Excellent holdover through a wide range of conditions
- Programmable platform, any frequency from 1 to 60 MHz
- LVCMOS or clipped sinewave output
- No activity dips or micro jumps
- GR-1244 Stratum 3E compliant

Contact SiTime for ±3 ppb or better stability options









Device Type	Device	Frequency (MHz)	Temp. Range (°C)	Stability (ppb)	Output Type	Package Size (mm²)
Precision OCXO	SiT5711	1 to 60	-20 to 70 -40 to 85	±5 to ±8 [1]	LVCMOS, Clipped Sine Wave	9.0 x 7.0
Digitally-Controlled Precision OCXO	SiT5721					

1. Contact SiTime for tighter stability options.

SiTime, a MEMS and analog semiconductor company, is the leader in frequency-control solutions. We combine innovative MEMS and programmable analog technologies with our systems expertise to break through the limitations of legacy quartz products and deliver the industry's best timing solutions. Our configurable products provide the most stable timing that enables customers to differentiate their systems with higher performance, small size and better reliability.