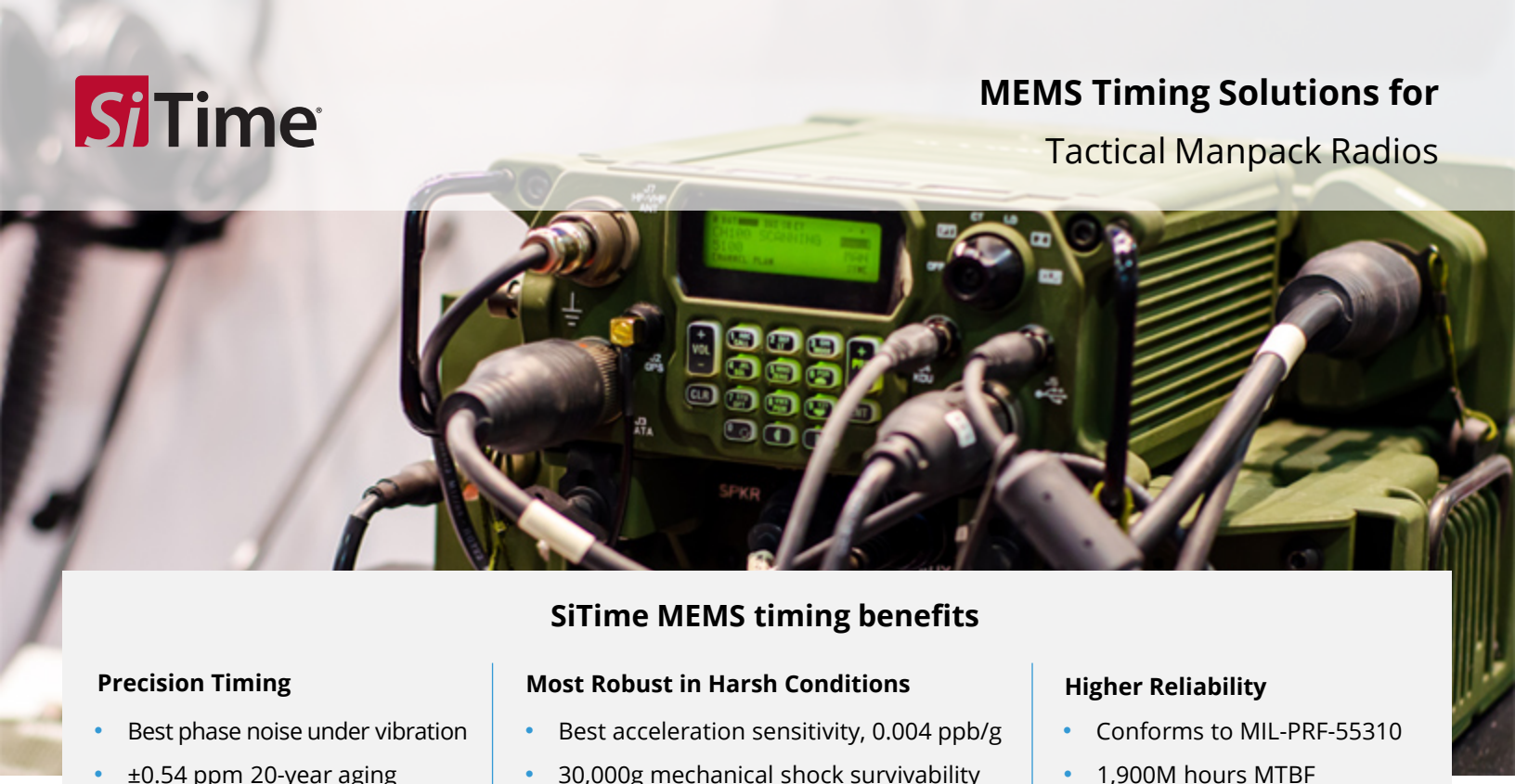
MEMS Timing Solutions for
Tactical Manpack Radios



SiTime MEMS timing benefits

Precision Timing

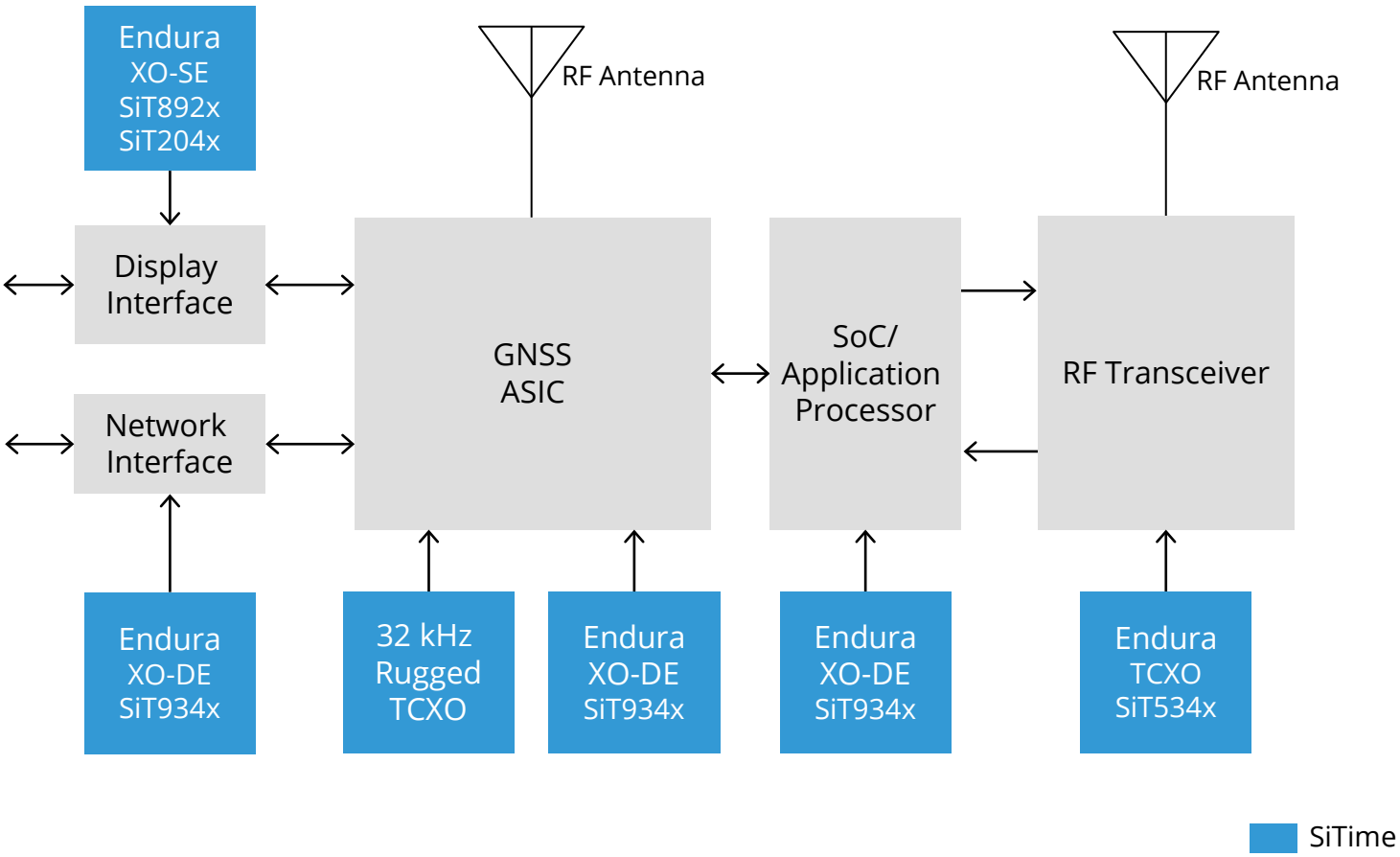
- Best phase noise under vibration
- ±0.54 ppm 20-year aging
- ±100 ppb from -55°C to 105°C
- 3.5 ppb/°C dF/dT, no lock loss under dynamic conditions

Most Robust in Harsh Conditions

- Best acceleration sensitivity, 0.004 ppb/g
- 30,000g mechanical shock survivability
- Exceeds MIL-STD-810H profile
- Extended operating temp range

Higher Reliability

- Conforms to MIL-PRF-55310
- 1,900M hours MTBF
- Hermetically sealed
- No cover or shielding needed



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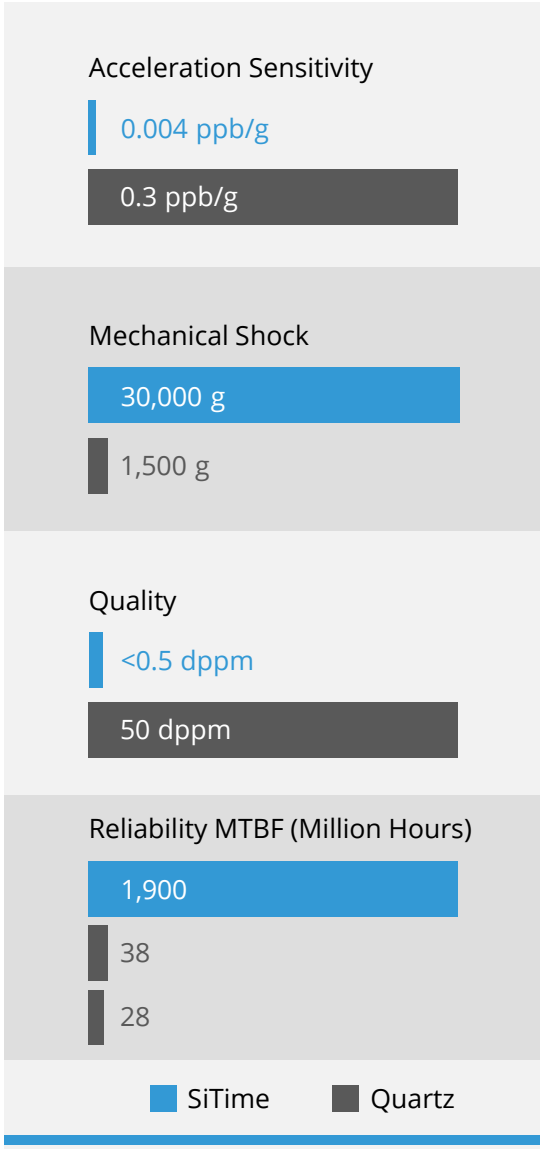
Application	Devices	Type	Function	Key Features
Tactical Manpack Radios	SiT5346/47 SiT5348/49	Super-TCXOs	Reference clock for baseband	1 to 220 MHz, 0.004 ppb/*g*, ±100 ppb, ±1 ppb/°C
	SiT1580	32 kHz TCXO	Time-keeping	32.768 kHz, ±5 ppm, 2.5 ns RMS IPJ, 1.2 mm^2 CSP
	SiT9346 SiT9347	Differential XOs	Processor clocking	1 to 725 MHz, ±10 ppm, 0.23 ps RMS phase jitter
	SiT8924/25 SiT2044/45	Single Ended XOs	Reference clock for HDMI Rx	1 to 137 MHz, ±20 ppm, -55°C to 125°C

MEMS Outperforms Quartz



Conforms to MIL Specifications

MIL-PRF-55310	Test	Single-ended XO	Differential XO/VCXO/DCXO	TCXO
3.6.40.1	Shock	●	●	●
4.8.18.3.1	g-Sensitivity	●	●	●
3.6.34.1	Frequency aging	●	●	●
3.6.17.1	g-Sensitivity, constant acceleration	●	●	●
3.6.38.3	Phase noise under vibration	●	●	●
3.6.10.2	Frequency-temperature stability with hysteresis	●	●	●
3.6.45.2	Ambient pressure	●	●	●
3.6.16.5	Allan deviation	n/a	n/a	●
3.6.10.4	Frequency-temperature stability with hysteresis and trim effect	n/a	●	●
3.6.15	Retrace	n/a	n/a	●
3.6.30.7	Modulation frequency response	n/a	●	●
3.6.41.1	Acceleration survivability	●	●	●
3.6.7	Frequency warm up	n/a	n/a	●

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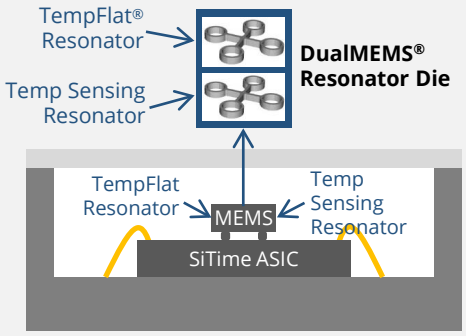
Better Dynamic Performance with DualMEMS Temperature Sensor

MEMS Super-TCXOs

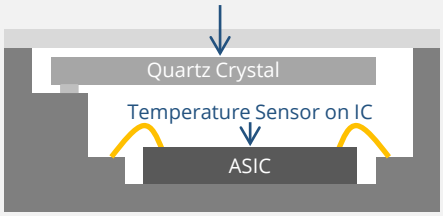


Excellent thermal coupling between two MEMS resonators in the same die

Digital low-noise, high-bandwidth TDC

Enables compensation of fast temp changes

Quartz TCXO

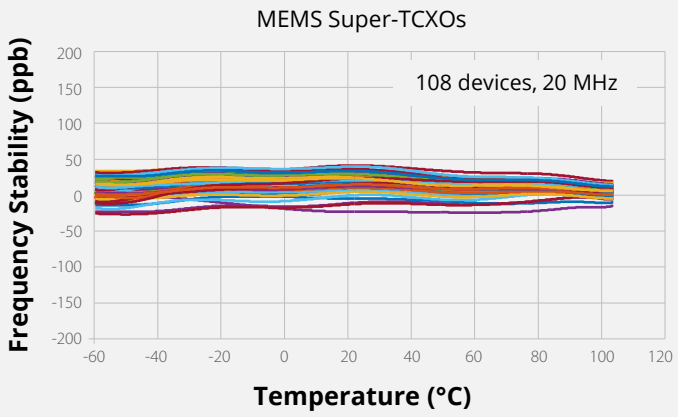


Limited thermal coupling between Quartz and ASIC

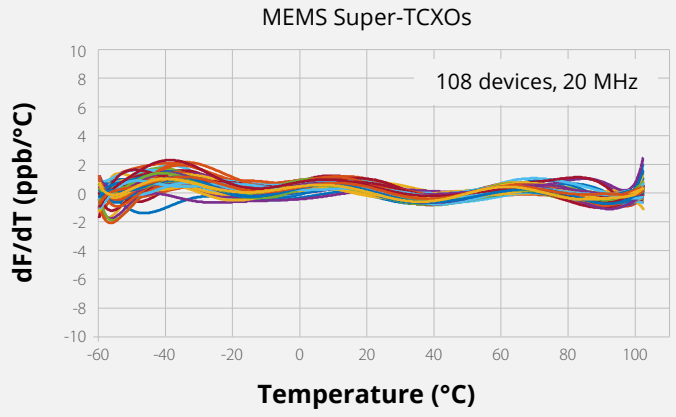
Analog noisy temp sensor

Limited compensation of slow temperature changes only

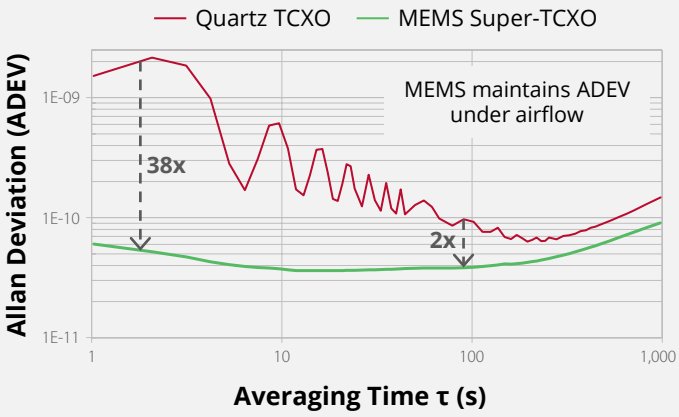
Tight Frequency Stability



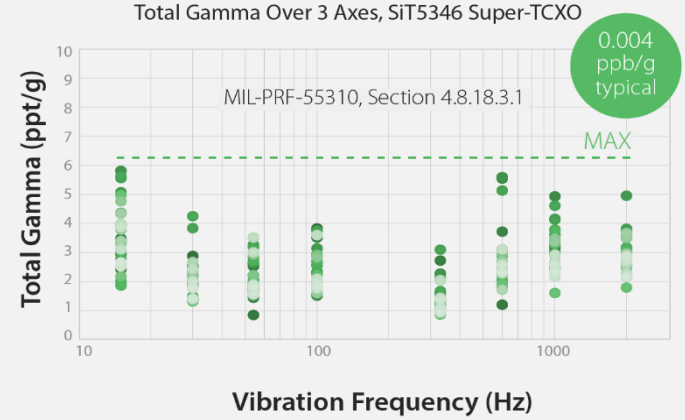
Better Frequency Slope



Excellent ADEV Under Airflow



Lower Acceleration (g) Sensitivity



Learn more about SiTime Aerospace-Defense Timing Solutions

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