# SiTime Expands Portfolio of Precision Timing Solutions for Aerospace and Defense with Two New Endura Oscillator Families

*Delivering up to 5x Better Stability, 10x Better Environmental Resilience, Best Jitter in Extreme Conditions*

SANTA CLARA, Calif.--(BUSINESS WIRE)--Jan. 26, 2023-- SiTime Corporation, (Nasdaq: SITM), the precision timing company, today announced two new Endura™ precision timing oscillator families. These ruggedized devices are engineered to deliver high performance in extreme conditions in aerospace-defense applications such as Positioning, Navigation and Timing (PNT), tactical communications, network synchronization and surveillance. The devices include the Endura ultra-stable Super-TCXO® and the Endura low-jitter differential oscillator. Both families deliver 10x better environmental resilience. In addition, the Endura Super-TCXO family delivers up to 5x better stability, while the differential oscillator family delivers the best jitter.

“Timing technology is ever more crucial in aerospace and defense applications where extreme conditions are the norm,” said Fari Assaderaghi, EVP, Technology and Engineering, SiTime. “Today, in these systems, timing is a major source of performance challenges during system verification, qualification, and field operation. This leads to significant engineering time spent in troubleshooting and/or negotiating waivers with end customers. With the drive to higher performance and positioning accuracy, timing requirements for new aerospace-defense electronics are only getting more stringent. It is difficult to foresee how legacy timing devices will continue to perform well in these new systems.”

“SiTime Endura precision timing solutions deliver a dramatically better user experience,” continued Assaderaghi. “Not only can designers count on the performance and reliability of Endura-based timing systems, but they can also save valuable development time that would have otherwise been spent in troubleshooting. The SiTime Endura family is fast becoming the preferred timing choice for aerospace and defense engineers.”

SiTime’s innovative MEMS, analog and systems technologies enable many features that simplify design. For example, frequencies are programmable up to 6 decimal places of accuracy and ensure that the designer can select the exact frequency they want, to enhance system performance. With a frequency stability specification as low as ±10 ppb, designers can replace unreliable, power-hungry, large OCXOs with easy-to-use Super-TCXOs. With an industry-leading power-supply noise rejection (PSNR) specification, SiTime devices are very resistant to power supply noise, which is a common problem in the dense electrical environments of aerospace-defense electronics.

**Key Specifications of the Endura SiT5541 Ultra-stable Super-TCXOs**

The device offers advanced specifications as below:

- 1 to 60MHz
- -40°C to +105°C operating temperature range, enables use in extreme temperatures
- ±10 ppb frequency stability over the full temperature range, highest amongst TCXOs, and able to replace more expensive, power-hungry, and less-reliable OCXOs
- Industry-leading 0.01 ppb/g g-sensitivity per MIL-PRF-55310
- 110 mW (typ.) power consumption, 2 to 10 times lower than ±10 ppb OCXOs
- ±0.5 ppb/°C dF/dT (frequency slope), resistant to thermal shock and airflow
- ±300 ppb 20-year aging at 85°C, eliminates expensive in-factory calibration that is required with less stable devices

- Small 7.0 mm x 5.0 mm ceramic package, insensitive to board bending stress, reducing board layout constraints

**Key Specifications of the Endura SiT9551/SiT9356/SiT9357 Ultra-low-jitter Differential Oscillators**

Endura differential oscillators enable low data error rates and uninterrupted communications for on-the-ground, mounted, dismounted and airborne conditions.

- SiT9551, 15 different frequencies from 25 to 644.5 MHz, 70 fs RMS typical IPJ (integrated phase jitter, 12 kHz to 20 MHz integration range)
- SiT9346, 1 to 220 MHz frequency range, 150 fs RMS typical IPJ
- SiT9347, 220 to 920 MHz frequency range, 150 fs RMS typical IPJ
- 9 fs/mV power supply noise rejection (PSNR) ensures peak performance in the presence of power-supply noise, which is a common issue in dense aerospace-defense electronics
- -55°C to +125°C operating temperature range, enables use in extreme temperatures
- 0.04 ppb/g g-sensitivity per MIL-PRF-55310
- ±20 to ±50 ppm frequency stability over the full temperature range
- 26 mA no load current (typ.) with LVDS, 1.8V, 2.5V or 3.3V supply voltage
- Available in 2016, 2520 and 3225 QFN packages

**Availability**

Both device families are sampling now. Contact SiTime for order information.

Volume production for Endura SiT5541 ultra-stable Super-TCXO is expected in March 2023, and for Endura SiT9551 low-jitter differential oscillators in July 2023.

Upon release, all Endura precision timing solutions will be available on SiTimeDirect ™ for quick configuration and 48-hour shipments.

**Additional Resources**

Download Endura image.
Endura ruggedized SiT5541 Super-TCXO.
Endura ruggedized SiT9551 differential oscillator.

**About SiTime**

SiTime Corporation is the precision timing company. Our programmable solutions offer a rich feature set that enables customers to differentiate their products with higher performance, smaller size, lower power, and better reliability. With over 3 billion devices shipped, SiTime is changing the timing industry. For more information, visit www.sitime.com

*Note on Forward-Looking Statements*

*This press release may contain forward-looking statements regarding future events. These forward-looking statements are intended to qualify for the safe harbor from liability established by the Private Securities Litigation Reform Act of 1995. Readers are cautioned that these forward-looking statements involve risks and uncertainties that could cause our actual results and the timing of events to differ materially from those anticipated in such forward-looking statements, including, but not limited to: our ability to ship products; and other risks and uncertainties described more fully in our documents filed with or furnished to the Securities and Exchange Commission. More information about these and other risks that may impact our business is set forth in our more recent Form 10-Q filed with the Securities and Exchange Commission. All forward-looking statements in this press release are based on information available to us as of the date hereof and*

*qualified in their entirety by this cautionary statement, and we assume no obligation to revise or update these forward-looking statements.*

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