SiTime's Endura Timing Solutions for Aerospace and Defense – A Standout in Ruggedized Performance

Highlights

- 4 parts per trillion per *g* force of acceleration – 50 times better than quartz
- Supports -55ºC and +125ºC operation
- Key timing specifications conform to MIL-PRF-55310
- Maximum choice – 5 million possible part numbers

SANTA CLARA, July 23, 2019 – SiTime Corporation, a market leader in MEMS timing, today unveiled its Endura™ MEMS timing solutions for aerospace and defense applications such as field and satellite communications, precision GNSS, avionics, and space. The Endura products are engineered to offer unmatched performance in harsh conditions – such as severe shock, vibration, and extreme temperature – that are routinely experienced in these applications. The devices also offer maximum choice to customers with 5 million possible part numbers that can be created from 17 programmable products.



"When exposed to high levels of shock, vibration and extreme temperatures, legacy timing components have been prone to failure, degrading system performance and reliability," said Piyush Sevalia, executive vice president of marketing. "To solve these problems, SiTime created an oscillator system of silicon MEMS, analog circuits, compensation algorithms and advanced packaging, which is designed to outperform any other available timing solution in harsh environments. For example, Endura precision TCXOs deliver 4 parts per trillion per *g* (ppt/*g*) of acceleration sensitivity, which is 50 times better than legacy quartz-based solutions. With such performance, we believe that Endura will transform the oscillator landscape in aerospace and defense."

About the Endura products

SiTime's broad portfolio of commercial off-the-shelf (COTS) Endura products spans six oscillator types and 17 products. All devices offer programmable options such as frequency, operating voltage, and stability. In

addition, some devices offer specialized programmable features such as spread spectrum, pull-range, and differential output type. Endura products are available with up to two grades of acceleration sensitivity, as low as 4 ppt/*g* (typical). This breadth of products provides customers with a large selection and the ability to configure each device for their application requirements.

Endura products are also designed for continuity of supply for long-life programs. For more information and datasheets, click on the part links below.

Endura Super-TCXOs (temperature compensated oscillators) for use in high-speed communications and GNSS applications

- SiT5146/SiT5147 – 1 to 220 MHz, ±0.5 to ±2.5 ppm, -40°C to +105°C
- SiT5346/SiT5347 – 1 to 220 MHz, precision ±0.1 to ±0.25 ppm, -40°C to +105°C
- SiT5348/SiT5349 – 1 to 220 MHz, ultra-precision ±0.05 ppm

Endura single-ended oscillators for use in ruggedized applications

- SiT8944/SiT8945 – 1 to 137 MHz, -55°C to +125°C
- SiT2044/SiT2045 – 1 to 137 MHz, -55°C to +125°C, in SOT-23 package for easier manufacturing and solder-joint inspection

Endura spread spectrum oscillators to reduce EMI (electro-magnetic interference)

- SiT9045 – 1 to 150 MHz, spread spectrum, -55°C to +125°C

Endura differential oscillators for high-speed serial communications

- SiT9346/SiT9347 – 1 to 725 MHz, ultra-low jitter

Endura VCXOs (voltage controlled oscillators) for clock synchronization

- SiT3342/SiT3343 – 1 to 725 MHz, ultra-low jitter, ±15 to ±50 ppm

Endura DCXOs (digitally controlled oscillators) for noiseless clock synchronization

- SiT3541/SiT3542 – 1 to 725 MHz, ultra-low jitter, ±20 to ±50 ppm, I2C programmable

Availability
Samples of Endura products are available now. Production quantities will be available in Q4 2019. Pricing is provided upon request.

In addition to commercial off-the-shelf (COTS) products, value-added services are also available. These services include

- 100 percent burn-in at high temperature
- 100 percent electrical test at temperature extremes
- QCI sample testing for high reliability and customer-generated drawings.

Additional up-screening flows for levels S and B in MIL-PRF-55310E Table III are available from SiTime partners that are on the Qualified Suppliers List of Distributors (QSLD) of the Defense Logistics Agency (DLA). These ITAR-registered suppliers can 100 percent up-screen SiTime Endura devices or sample test them in accordance with MIL-PRF-55310 requirements and MIL-STD-883 methods.

About SiTime

SiTime Corporation, a market leader in MEMS timing and a wholly owned subsidiary of MegaChips Corporation (Tokyo Stock Exchange: 6875), offers MEMS-based silicon timing system solutions. SiTime's configurable solutions offer a rich feature set that enables customers to differentiate their products with high performance, small size, low power, and high reliability. By using standard semiconductor processes and high-volume packaging, SiTime offers short lead times and can meet unforecasted demand. With over 1.3 billion devices shipped, SiTime is changing the timing industry. www.sitime.com.