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New SEL Clock Delivers Unmatched Gains in Precision and Security

PULLMAN, WA — September 8, 2014 — Schweitzer Engineering Laboratories, Inc. (SEL) today announced the release of the SEL-2488 Satellite-Synchronized Network Clock designed for critical infrastructure and harsh environments that require highly reliable, precise time synchronization.

The SEL-2488 Satellite-Synchronized Network Clock receives Global Navigation Satellite System (GNSS) time signals and distributes precise time via multiple output protocols, including IRIG-B and Network Time



Protocol (NTP), and soon will add support for Precision Time Protocol (PTP) as a firmware upgrade. The SEL-2488 is accurate to industry-leading ± 40 ns, which is ideal for applications requiring precise time information, such as synchrophasors. To further improve time distribution accuracy, the SEL-2488 provides time delay compensation for antenna cables and output cables on a per-port basis. If GNSS time signals become unavailable, the clock switches to the TCXO holdover, with 36 μ s/day accuracy, or to an optional OCXO holdover, with 5 μ s/day accuracy.

“This is a big step forward in accuracy, but that’s only a part of the story,” said SEL R&D Vice President Dave Whitehead. “With the SEL-2488, we’ve also incorporated the same security technologies that we build into our other communications products.”

Leveraging the technology offered in the SEL-2730M 24-Port Ethernet Switch, SEL has included security features in the SEL-2488 that other critical infrastructure clocks don’t offer. These features include Syslog, the Ethernet standard for event messaging, which allows the SEL-2488 to integrate smoothly into a customer’s existing event system; role-based accounts and Lightweight Directory Access Protocol (LDAP) for user authentication; and a secure HTTPS web interface, which provides a graphical SkyView™ display for troubleshooting signal or antenna issues. The SEL-2488 also meets IEEE 1613 Class 1, an electric transient and interference standard for communications products.

“Why wouldn’t you require the same security features and type test standards that you require in other equipment used in critical infrastructure applications?” said Shankar Achanta, SEL R&D manager. “Dependable time synchronization is an essential requirement in today’s substations, and these features will help customers enhance security and comply with NERC CIP.”

The SEL-2488 offers additional security and reliability features, including Satellite Signal Verification in which the clock uses two satellite constellations to validate time signals, providing a layer of protection from GPS spoofing attacks. For fault tolerance, customers can opt for a second, redundant power supply, which can be connected to a second power input source. The clock operates within a range of -40° to $+85^{\circ}\text{C}$ (-40° to $+185^{\circ}\text{F}$) and is backed by SEL’s ten-year, no-questions-asked warranty.

Designed, tested, and manufactured in Pullman, Washington, a standard SEL-2488 configuration, including a dual-constellation, high-gain GNSS antenna, retails for \$2,700. PTP, as defined by IEEE 1588, will be available in a future release as a firmware upgrade. To learn more about the SEL-2488 Satellite-Synchronized Clock, visit www.selinc.com/p205.

SEL serves the power industry worldwide through the design, manufacture, supply, and support of products and services for power system protection, monitoring, control, automation, communications, and metering. For more than thirty years, SEL has offered unmatched local technical support, a worldwide, ten-year product warranty, and a commitment to making electric power safer, more reliable, and more economical.

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