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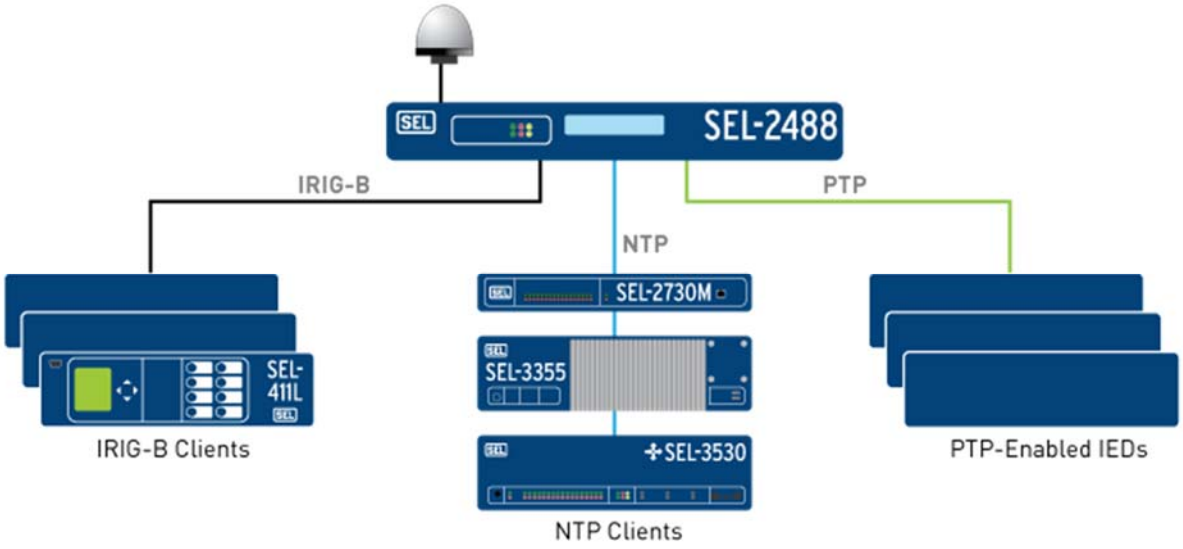
Synchronize with submicrosecond accuracy using IRIG-B and PTP

With multiple protocol options, one network clock can meet a wide range of application needs.

PULLMAN, Wash. — April 22, 2015 — Schweitzer Engineering Laboratories, Inc. (SEL) has added support for the Precision Time Protocol (PTP) to the SEL-2488 Satellite-Synchronized Network Clock. In just one clock, users can now synchronize end devices with submicrosecond accuracy using demodulated IRIG-B and/or PTP. The SEL-2488 can meet all the timing needs of industrial and utility applications.

In addition to providing IRIG-B and NTP outputs, the SEL-2488 can now serve as a PTP grandmaster clock, supporting both the default profile (IEEE 1588-2008) and the power system profile (IEEE C37.238). The SEL-2488 is capable of synchronizing time for up to four independent networks with a time-stamp accuracy of 100 nanoseconds. Existing users of the SEL-2488 can purchase this as a firmware upgrade.

“Now there’s a choice,” said Shankar Achanta, R&D manager for precise time and wireless networks at SEL. “You can use different timing protocols based on your infrastructure and application needs. The SEL-2488 is the one network clock that can meet all our customers’ timing needs.”



Time distribution capabilities of the SEL-2488.

The SEL-2488 was first released in September 2014. SEL included several security features in the SEL-2488 that other critical infrastructure clocks don’t offer, such as 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 and exceeds IEEE 1613 Class 1, an electric transient and interference standard for communications products.

The SEL-2488 offers additional security 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 hot-swappable power supply, which can be connected to a second power input source. If GPS is lost, the clock switches to a standard TCXO holdover with 36-microsecond-per-day accuracy or an optional OCXO holdover with 5 microsecond average accuracy. The clock operates over a wide temperature range of –40° to +85°C (–40° to +185°F) and is backed by SEL's 10-year, no-questions-asked worldwide 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. The PTP firmware upgrade option for existing users costs $1,750. To learn more about the PTP enhancement in the SEL-2488, visit www.selinc.com/p222.

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 30 years, SEL has provided industry-leading performance in products and services, local technical support, a 10-year worldwide warranty and a commitment to making electric power safer, more reliable and more economical.

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