Silicon Labs and Calnex Simplify SyncE Design and Testing with Proven Solution Using Marvell Alaska C 25GbE/100GbE Transceivers

-- Joint Testing Demonstrates Synchronous Ethernet Compliance to Accelerate Time to Market for High-Speed Ethernet Designs --

AUSTIN, Texas and LINLITHGOW, UK – May 15, 2018 – Silicon Labs (NASDAQ: SLAB) and Calnex Solutions today announced a proven reference design for ITU-T G.8262-compliant Synchronous Ethernet (SyncE) applications at 25G and 100G Ethernet rates. The solution is based on the Marvell® Alaska® C family of high-speed Ethernet transceivers, Silicon Labs' Si5348 low-jitter network synchronizer clock and the Calnex Paragon-100G test platform.

Cisco VNI forecasts mobile data traffic is expected to grow at a compound annual growth rate of 46 percent between 2016 and 2021. This transition is driving service providers to deploy higher capacity 25GbE and 100GbE links to backhaul mobile data from wireless base stations to metro/core optical networks. 4G and 5G networks have stringent requirements for phase and frequency synchronization to mitigate interference and more effectively share user bandwidth between adjacent cell sites. Mobile backhaul and fronthaul networks will use a combination of IEEE® 1588 and SyncE to distribute phase and frequency synchronization across the network. The joint Silicon Labs and Marvell solution enables equipment providers to extend SyncE to their highest speed backhaul and fronthaul networks and design with confidence using a proven solution for packet network synchronization.

"Carriers and data center operators are responding to the insatiable demand for video streaming and mobile data by transitioning to higher speed Ethernet networks," said James Wilson, Senior Marketing Director for Silicon Labs' timing products. "Silicon Labs is excited to partner with Marvell and Calnex to offer a proven, SyncE-compliant solution for 25/50/100/200/400GbE designs."

The joint solution uses Silicon Labs' Si5348 low-jitter network synchronizer in combination with the Marvell Alaska C 88X5123 and 88X5113 25GbE/100GbE industrial temperature-capable Ethernet transceivers. The Si5348 synchronizer, a part of Silicon Labs' growing portfolio of high-performance network synchronization products, is the industry's lowest jitter, most highly integrated clock solution for Synchronous Ethernet. The device's industry-leading jitter performance of 100 fs rms (typ) optimizes transceiver performance and helps minimize system-level bit-error rates. The device supports three fully independent, frequency flexible DSPLLs, enabling a single clock IC to support SyncE clock synchronization and clock generation as well as general-purpose timing for FPGAs, processors and other devices.

The solution was tested using the Calnex Paragon-100G, a fully SyncE-compliant test platform that provides automated wander, jitter, transient and IEEE-1588 precision time protocol testing with industry-leading measurement precision. The overall solution, including the network synchronizer and Ethernet transceiver, was fully tested for compliance with ITU-T G.8262. Test results show that the solution has significant margin to G.8262 Ethernet Equipment Clock (EEC) Option 1 and Option 2 jitter generation and jitter tolerance requirements. The design is optimized to minimize phase transients caused by a protection switch (e.g., a fiber cut). The resulting solution provides significant margin to both current ITU-T G.8262 specifications as well as the more stringent G.8262.1 enhanced EEC standards currently in development. For a copy of this SyncE compliance report, visit www.silabs.com/synce-reference-design.

"Mobile backhaul is becoming an important application for Marvell's Alaska C 100GbE/25GbE transceivers, and Marvell is delighted to be a part of the Silicon Labs' ITU-T G.8262 compliant solution for this market," said Ron Cates, Senior Director for Marvell's Ethernet PHY product line.

"Clocking technologies like SyncE and precision time protocol (PTP) give carriers, webscale companies and data centers the ability to offer high-value services for applications like video and mobile data," said Anand Ram, Vice President of Marketing at Calnex. "This approach only works if the performance of SyncE and PTP is proven at higher speeds including 25G, 100G and beyond. With this testing project, Silicon Labs, Marvell and Calnex have proven that we fully comply with SyncE standards, enabling hardware engineers to design 25GbE/100GbE systems with confidence using this joint solution."

For more information about Silicon Labs' network synchronization solutions, visit https://www.silabs.com/products/timing/clocks/network-synchronizer-clocks.

For more information about the Calnex Paragon-100G, visit https://www.calnexsol.com/en/solutions-en/paragon-100g.

About Calnex Solutions

Calnex Solutions is a leading provider of R&D test solutions for telecom synchronization technologies. The company serves customers in more than 65 countries, including many of the largest telecom companies in the world. Information about Calnex is available on the Web at www.calnexsol.com.

About Silicon Labs

Silicon Labs (NASDAQ: SLAB) is a leading provider of silicon, software and solutions for a smarter, more connected world. Our award-winning technologies are shaping the future of the Internet of Things, Internet infrastructure, industrial automation, consumer and automotive markets. Our world-class engineering team creates products focused on performance, energy savings, connectivity and simplicity. www.silabs.com.

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