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Luxtera's Silicon Photonics Technology Enables 100Gbps Data Center Interconnects

Selected to showcase as a disruptive technology at SC10

SC10, New Orleans, Louisiana – November 15, 2010 – [Luxtera](#), the worldwide leader in [Silicon CMOS Photonics](#), today announced the demonstration of 25Gbps receiver technology in its CMOS-based Silicon Photonics platform. Leveraging the benefits of Silicon Photonics to overcome the barriers of current generation parallel and serial 10Gbps solutions, Luxtera can now fully support unmatched levels of optical interconnect bandwidth while offering extended reach at low cost. This technology, combined with Luxtera's recently announced [25Gbps transmitters](#), enables development of products for parallel 100Gbps InfiniBand and Ethernet, as well as for serial 32G Fibre Channel applications. Recognizing its potential impact in the high performance computing (HPC) market, Luxtera was selected to showcase its transceivers as part of the disruptive technologies exhibit at this year's [SuperComputing](#) (SC10) in New Orleans.

“Processor computing capabilities are continuously increasing, putting pressure on the interconnect,” said Shai Rephaeli, vice president of interconnect products at Mellanox Technologies. “Cost-effective, high throughput interconnect solutions are required to support large-scale computing systems. Breakthroughs in interconnect technologies, such as Luxtera's high speed transceivers will help enable economic solutions for these next generation 100Gbps InfiniBand and Ethernet networks.”

Silicon Photonics utilizes CMOS processes to deliver on-chip waveguide level modulation and photo-detection. Unlike traditional directly modulated transceivers, lasers in silicon photonics applications are always on, acting as a continuous supply of photons to the chip - analogous to electrical power suppliers in electronic applications. In addition, light from a single laser is utilized to power multiple optical transmitters on a chip eliminating the need for multiple lasers and reducing transceiver cost. This fact allows Luxtera to reuse the same laser used in current production 10Gbps transceivers to power next generation higher speed products, thus eliminating the need for development of higher speed light sources. When combined with single-mode fiber and waveguide photodetector receivers, this solution offers practically unlimited reach and performance at 25Gbps.



“Our large-scale data center spans thousands of square feet spread over multiple computer room floors in two buildings a mile apart” said Bob Ciotti, supercomputing system lead at NASA’s advanced supercomputing facility. “Our largest system currently has over 40 miles of InfiniBand cables, most of it parallel 10Gbps optical links. As we expand and transition to faster systems, we will require thousands of even faster optical transceivers that are cost effective, low power and can operate reliably from 10 meters to 2 kilometers.”

“Our 25Gbps silicon proven transceiver technology will enable data centers to keep pace with growing bandwidth demands, providing end-users with enhanced connectivity; all at a cost per gigabit lower than the current generation of interconnects,” said Peter De Dobbelaere, vice president of engineering at Luxtera. “Selection to showcase in this year’s SC10 disruptive technologies exhibit further underscores the technology’s potential to disrupt the HPC landscape.”

“A technology is considered disruptive if it is so much better than current practice that it is poised to displace the incumbent technology and becomes the standard practice for future technologies,” said John Shalf of SC10. “We selected Luxtera’s optical transceiver for the SC10 disruptive technologies exhibit because it represents a dramatic shift from conventional practice for these devices. To date, optical transceivers have relied on directly modulating the laser source, turning the entire laser on and off as fast as possible, which you can imagine would be difficult. Luxtera’s device uses Silicon Photonics technology to modulate the light directly rather than the laser source. This not only enables a path to scaling to even higher signaling rates, it can also greatly reduce the cost of optical devices in the future. Given these capabilities, it is poised to drastically change optical transceiver technology across the industry.”

For the third year in a row, Luxtera’s 40Gbps Active Optical Cables (AOC), Blazar, will provide connectivity for the SC10 SCinet InfiniBand network, built for HPC demonstrations. Selected for its extended reach and reliability, Blazar can support up to 4,000 meters and offers the industry’s lowest power consumption of 20mW per Gigabit.

Luxtera will showcase its 25Gbps transceiver technology in the disruptive technology booth number 1042c from November 15-18. Its commercially shipping products, Blazar and OptoPHY, optics on motherboard transceivers, will be featured in Luxtera booth # 3147.

Commercial products based on 25Gbps transceiver technology availability will coincide with the market’s introduction of 100Gbps EDR InfiniBand and 100G



Ethernet Systems. Initial products will be delivered in 4x25G configurations, with potential platform extensions to highly parallel interconnects such as 12x and 16x. Those interested in more information should contact Luxtera at sales@luxtera.com.

About Luxtera:

Luxtera, Inc. is the world leader in Silicon CMOS Photonics. It is the first company to overcome the complex technical obstacles involved with integrating high performance optics directly with silicon electronics on a mainstream CMOS chip, bringing direct “fiber to the chip” connectivity to market. With its award-winning Blazar active optical cable and optics on motherboard OptoPHY transceiver family, Luxtera is breaking cost barriers associated with traditional multimode optics and offers a roadmap to high performance optical connectivity and copper cost points. Headquartered in Carlsbad, California, Luxtera is a fabless semiconductor company that was founded in 2001 by a team of industry-renowned researchers and technology managers drawn from the communications and semiconductor industries. Luxtera has received funding from leading venture capitalists including August Capital, New Enterprise Associates, Sevin Rosen Funds and Lux Capital. More information can be found on the company's web site: www.luxtera.com.

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