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Luxtera Debuts 1310nm 100G-PSM4 QSFP28 Module and Silicon Photonics Chipset at OFC 2015

Now sampling to customers, Luxtera's 100G-PSM4 silicon photonics chipset and QSFP optical transceiver module provides enhanced performance

Carlsbad, Calif. – March 23, 2015 – [Luxtera](#), the global innovation leader in Silicon Photonics solutions, today announces immediate availability of its 100G-PSM4 compliant chipset and QSFP optical module at OFC 2015. The LUX22604 100G-PSM4 silicon photonics chipset and LUX42604 QSFP optical module offer customers superior performance, reliability, and price that makes them the ideal 100Gb solution for cloud computing/hyperscale, financial services, and high performance computing (HPC) datacenter applications requiring up to 2km of reach.

The requirement for cost-effective 100Gb Single Mode Optics has become crucial to building the next generation of datacenters. In particular, the major hyperscale “cloud” datacenters are planning to adopt 100Gb at scale starting in 2015. Due to the large physical size of these datacenters, they require fiber optic links of up to 2km in significant volumes. At 100Gbps data rates, these reach requirements can no longer be serviced by traditional short-reach multimode optical solutions. More than 80 percent of the cost of deploying these large scale networks is in the optical link, and finding a solution is critical to scaling these datacenters to 100Gb and beyond.

Similarly, enterprise applications such as financial services and HPC datacenters require 100Gbps data rates, but in combination with very low latency. Traditional short-reach multimode optics cannot meet this requirement, as those require complex algorithms such as forward error correction (FEC) that make up for poor signal quality by trading off latency. The superior performance of Luxtera's Silicon Photonics PSM4 solution allows for error-free operation without FEC, enabling key latency benefits over alternative copper wire and multimode fiber solutions.

Beginning with 100G, these key markets will transition from copper and legacy multimode fiber to single mode fiber at volume scale. Finding low cost single mode products has become an imperative and Luxtera is uniquely positioned to satisfy this requirement.

“In 2015, hyperscale data centers are undergoing a tectonic shift as the industry moves to 100Gb, and single mode photonics replace copper to become the mainstream interconnect. Luxtera is at the forefront of this transition with the only optical transceiver technology that can deliver 100Gb speeds with up to 2km of reach at the aggressive cost points needed for these high volume deployments. Today we are introducing our first Hybrid Silicon Photonics architecture products including the industry's first 1310nm 100G-PSM4 MSA compliant QSFP28+ pluggable module and a fully integrated SiP PSM4 chipset,” said Greg Young, President and CEO of Luxtera. “Luxtera pioneered the field of Silicon Photonics starting in 2001 and began production



of 40Gb SiP AOCs in 2008. With these new products we are addressing connectivity needs of hyperscale/cloud and enterprise datacenters with standard compliant products. We look forward to moving further into these core markets by delivering additional high performance single mode fiber solutions."

LUX42604 Key Features

- 100Gb optical transceiver
- QSFP28 compliant module form-factor
- Four 4 x 26 Gbps independently operating channels, full-duplex operation
- Multirate: 1 – 25.78 Gbps (per channel)
- FEC not required for error free operation but also supports Clause 74 and 91 FEC
- 1310nm PSM4 MSA compliant – as described by www.psm4.org.
- Proven Light Source and Packaging Technology
- Extended Reach Up to 2000 Meters
- Less than 3.5W worst case power

Availability

The LUX42604 100G-PSM4 QSFP optical transceiver module is sampling now to select customers, with volume production expected to begin in the second half of 2015.

The LUX22604 100G-PSM4 Silicon Photonics chipset is sampling to potential packaging and optical module partners.

Luxtera will be exhibiting at OFC 2015 in LA on March 24-26, 2015 at the Los Angeles Convention Center at booth #1868. NDA required for access.

Industry Quotes

Original Equipment Manufacturers (OEMs):

Luca Cafiero, Senior Vice President and General Manager SVS, Cisco

“Cisco is always looking for the best possible optics for use in its systems, and silicon photonics has long been seen as a critical element for 100G data center systems,” said Luca Cafiero, Sr. VP GM SVS, Cisco. “Luxtera’s 100G-PSM4 products complement Cisco’s focus on delivering high density 100G data center solutions offering truly disruptive opportunities for our large scale cloud customers.”

Lars Frank, Vice President Program Management, DU Network Functions and Cloud, Ericsson

Lars Frank Vice President, Program Management, DU Network Functions and Cloud, Ericsson says: “With the growing demands of the hyperscale datacenter, Ericsson has seen single mode optics become an increasingly critical part of the system network and PSM4 is a critical element in the design of the HDS8000 optical interconnect. As data rates and reaches have increased, the limitations of contemporary optics have become more apparent, forcing end users to choose between low cost and long reach, placing hard constraints on datacenter architects. Luxtera’s



100G-PSM4 silicon photonics solutions change this paradigm, by allowing long reach and low cost with best in class performance.”

John Sontag, Vice President, Systems Research, HP Labs

“We’d like to congratulate Luxtera on their achievement in bringing their 100Gbps silicon photonic technology to market,” said John Sontag, Vice President, Systems Research, HP Labs. “Luxtera’s new 100Gbps PSM4 MSA compliant modules demonstrate the viability of low-cost, high-bandwidth photonic interconnects, which will accelerate the development of hyperscale cloud data centers and ultimately The Machine, HP Labs’ research project to reinvent computing from the ground up.”

Industry Ecosystem Partners:

Jeff Waters, Senior Vice President and General Manager, Altera

“As Altera’s FPGAs increase in performance with faster signaling and more I/Os, breaking high-speed signaling in and out of our devices using traditional electrical channels becomes a greater challenge. Optical high-speed interfaces and silicon photonics provide a compelling option for addressing this challenge,” said Jeff Waters, Senior Vice President and General Manager, Altera Business Units. “Luxtera’s silicon photonics technology complements our FPGAs in providing low-cost, low-power and high-throughput optical modules to address the bandwidth and signaling requirements for data center applications.”

Frank Ostojic, Senior Vice President and General Manager, ASIC Products Division, Avago

“Avago’s industry leading 25-32Gbps SerDes family is designed into a broad range of networking ASICs. Avago is committed to providing leading-edge SerDes to enable our customers to address the ever-increasing demand for networking bandwidth,” said Frank Ostojic, Senior Vice president and General Manager of Avago’s ASIC Products Division. “We are pleased to see the availability of Luxtera’s 100G-PSM4 modules, a critical requirement of many hyperscale datacenter applications and early adopters of 100Gbps systems.”

Nick Kucharewski, Vice President, Network Switch Marketing, Broadcom

“Broadcom’s StrataXGS® Tomahawk and StrataDNXTM Switch Series are driving the 25/50/100G Ethernet upgrade cycle for networking hardware across cloud data centers and carrier networks. The broad availability of high-quality, economical 100G optics is key for this transition. We are excited to be collaborating with Luxtera on reference designs featuring their 100G-PSM4 optical solutions.”

Dr. Ho-Ming Tong, President, Cyntec & Component Business Group, Delta Electronics

“Delta is quickly becoming a world leader in optics and it views silicon photonics as a key technology for 100G systems and beyond,” said Dr. Ho-Ming Tong, President, Cyntec & Component Products Business Group, Delta Electronics. “Luxtera’s silicon photonic’s based 100G-PSM4 products support Delta’s goal of driving market leadership by simultaneously allowing low cost and long reach over a common single mode fiber plant.”



Industry Analyst:

Dale Murray, Principal Analyst, Light Counting Market Research

“The move to 25G server connections will accelerate the market need for cost-effective 100G switch-to-switch links with datacenter reach,” stated Dale Murray, Principal Analyst, Light Counting Market Research. “We believe that 100G-PSM4 modules are a good application for Silicon Photonics and will become a popular choice for large data centers that want to upgrade from multimode fiber.”

About Luxtera

Luxtera, Inc. is the world leader in Silicon 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. 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 website: www.luxtera.com.

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