

NeoPhotonics Announces Demonstration of 400 Gbps Transmission over 800km in a 75GHz-spaced DWDM System by its QSFP-DD Pluggable Coherent Module

NeoPhotonics 400ZR+ Performance Extends Applications of Small Form Factor Coherent Pluggable Modules to Metro and Regional Networks

SAN JOSE, Calif. — March 22, 2021 - NeoPhotonics Corporation (NYSE: NPTN), a leading developer of silicon photonics and advanced hybrid photonic integrated circuit-based lasers, modules and subsystems for bandwidth-intensive, high speed communications networks, today announced that it has demonstrated that its 400ZR+ QSFP-DD coherent pluggable transceiver can effectively transmit at a 400 Gbps data rate over a distance of 800 km in a 75GHz-spaced DWDM system with more than 3.5 dB of OSNR margin in the optical signal. This 400ZR+ coherent pluggable transceiver module is based on NeoPhotonics high performance coherent optics and its ultra-pure color tunable laser, and achieves a reach of 800 km while staying within the power consumption envelop of the QSFP-DD module's power specification. The Company believes these 400ZR+ QSFP-DD modules will find wide application in the Cloud-based Metro 5G networks, and will extend use cases for IP over DWDM into metro-core and regional networks.

This 800 km transmission demonstration was carried out on NeoPhotonics Transmission System Testbed and utilized 75 GHz spaced channels. The QSFP-DD uses NeoPhotonics Silicon Photonics based Coherent Optical Subassembly (COSA) and its ultra-narrow linewidth Nano-ITLA tunable laser. The longer reach was enabled by the superior performance of these optical components along with a commercial digital signal processor (DSP) using proprietary forward error correction (FEC). The COSA exhibits low insertion loss and low impairments, making efficient use of the optical signal. The Nano-ITLA tunable laser exhibits ultra-low phase noise and low power consumption. Additionally, these components allow NeoPhotonics 400ZR+ QSFP-DD transceiver module to operate at a case temperature of up to 80 degrees Celsius, which is ten degrees higher than conventional telecom modules, thereby reducing air flow requirements resulting in lower fan speeds and reduced power for cooling in data centers.

NeoPhotonics QSFP-DD modules are in the final stages of qualification and have passed 2000 hours of High Temperature Operating Life (HTOL) and other critical tests per Telcordia requirements. The Company expects these modules to be at General Availability (GA) within the second quarter of 2021.

NeoPhotonics 400ZR+ QSFP-DD transceivers are designed to operate in 75 GHz spaced DWDM systems using 64 Channel Arrayed Waveguide Grating MUX and DMUX filters, such as those made by NeoPhotonics. In this case, a fully loaded fiber operating in the C-Band would provide a total of 25.6 Terabits per second (Tbps) capacity. To further maximize the data capacity of optical fibers, NeoPhotonics has developed an enhanced version of its ultra-low noise laser in a C++ LASER™ module, which has a tuning range of 6 THz, enabling a total fiber capacity of 32 Tbps using 400Gbps transceivers and 75 GHz channel spacing.

“We are excited to extend the operation of our QSFP-DD Coherent transceiver into metro and regional applications in this 400ZR+ configuration,” said Tim Jenks, Chairman and CEO of NeoPhotonics. “Advances in our ultra-pure light tunable laser, our silicon photonics integrated COSA and electronic DSPs have inexorably decreased the size, power and cost of coherent transmission such that a coherent transceiver capable of up to long haul distances can fit in the same form factor as a current generation high

density client side pluggable module, such as a QSFP-DD. This has been a sea change for Data Center Interconnect networks, and we believe it will also bring fundamental changes to metro and regional networks,” concluded Mr. Jenks.

About NeoPhotonics

NeoPhotonics is a leading developer and manufacturer of lasers and optoelectronic solutions that transmit, receive and switch high-speed digital optical signals for Cloud and hyper-scale data center internet content provider and telecom networks. The Company’s products enable cost-effective, high-speed over distance data transmission and efficient allocation of bandwidth in optical networks. NeoPhotonics maintains headquarters in San Jose, California and ISO 9001:2015 certified engineering and manufacturing facilities in Silicon Valley (USA), Japan and China. For additional information visit www.neophotonics.com.

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