NeoPhotonics Announces CFP2-DCO Module Transmission of 400Gbps over 1500km in a 75 GHz-spaced EDFA Only DWDM System

NeoPhotonics CFP-DCO Coherent Pluggable Modules Extend Use Cases to Metro, Regional and Long Haul Networks

SAN JOSE, Calif. — June 7, 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 used its Multi-Rate CFP2-DCO coherent pluggable transceivers to effectively transmit at a 400 Gbps data rate over a distance of 1500 km in a 75 GHz-spaced DWDM network. This 1500 km transmission demonstration was carried out on NeoPhotonics Transmission System Testbed using production modules with enhanced firmware and utilized 75 GHz spaced channels taking the adjacent channel crosstalk-induced penalty into account. The transmission system contains 19 in-line erbium-doped fiber amplifiers (EDFA).

To achieve 1500 km reach and a 400G data rate, the modules were operated at 69 Gbaud using 16 QAM modulation. Probabilistic constellation shaping and a soft-decision forward error correction codec were used to achieve a required OSNR of approximately 20 dB, which is comparable to coherent line card port performance from leading chassis-based coherent systems. The modules each consumed considerably less electrical power than line card solutions operating at comparable data rates and distances.

These 400G CFP2-DCO coherent pluggable transceiver modules use NeoPhotonics high performance Indium Phosphide based coherent components, along with its ultra-narrow linewidth tunable laser. These components are all shipping in high volume into multiple coherent system applications, and include:

- Class 40 CDM: NeoPhotonics Class 40, polarization multiplexed, quadrature coherent driver modulator (CDM) features a co-packaged InP modulator with a linear, high bandwidth, differential driver, and is designed for low V-Pi, low insertion loss and a high extinction ratio. The compact package is designed to be compliant with the form factor of the OIF Implementation Agreement #OIF-HB-CDM-01.0.

- Class 40 Micro-ICR: NeoPhotonics Class 40 High Bandwidth Micro-Intradyne Coherent Receiver (Micro-ICR) is designed for >60 GBaud symbol rates. The compact package is designed to be compliant with the OIF Implementation Agreement OIF-DPC-MRX-02.0.

- Nano-ITLA: NeoPhotonics Nano-ITLA is based on the same proven and reliable high performance external cavity architecture as NeoPhotonics' industry leading Micro-ITLA and maintains comparable ultra-narrow linewidth, low frequency phase noise and the low power consumption in a compact package approximately one half the size.

NeoPhotonics Multi-Rate CFP2-DCO modules are fully qualified. Telcordia testing has been successfully extended to 2000 hours of High Temperature Operating Life (HTOL) testing, showing the high reliability and performance of NeoPhotonics CFP2-DCO platform.

Multi-Rate CFP2-DCO modules supporting Metro (64 Gbaud/DP-16 QAM) and Long Haul (64 Gbaud/DP-QPSK) applications are shipping in General Availability.

"Coupled with our recent demonstration of 800 km 400 Gbps transmission using our 400ZR+ QSFP-DD, our CFP2-DCO 400G 1500km transmission brings the use of pluggable modules in regional and long haul networks closer to reality," said Tim Jenks, Chairman and CEO of NeoPhotonics. "The ability to implement a long haul coherent transponder in the size and power envelope of a pluggable module is a testament to the progress that has been made in photonic integration and DSP development, and has the potential to be a game changer for telecom as well as DCI 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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This press release includes statements that qualify as forward-looking statements under the Private Securities Litigation Reform Act of 1995, including anticipated performance of NeoPhotonics' products. Readers are cautioned that these forward-looking statements involve risks and uncertainties and are only predictions based on the company's current expectations, estimates and projections. The actual company results, product performance, product development, and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of these risks, uncertainties and assumptions. Certain risks and uncertainties that could cause the company's results to differ materially from those expressed or implied by such forward-looking statements as well as other risks and uncertainties relating to the company's business, are described more fully in the Company's Annual Report on Form 10-K for the year ended December 31, 2020, and the Company's Quarterly Report on Form 10-Q for the three month period ended March 31, 2021, filed with the Securities and Exchange Commission.

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