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News Release

OFS MULTICORE FIBER ENABLES WORLD-RECORD TRANSMISSION: 120 GB/S OVER 100 METERS ON SINGLE MULTICORE MULTIMODE FIBER STRAND

Important Milestone in Development of Next-Generation Supercomputer and Data Center Networks

OFC/ NFOEC 2012, Booth 2125, Los Angeles, California, March 5, 2012 - OFS, a leading designer, manufacturer and supplier of innovative fiber optic network products, has announced a world record transmission of 120 Gb/s over 100 meters across a single strand of multimode fiber.

The joint demonstration was enabled by a seven-core laser-optimized multimode fiber made with OFS LaserWave® fiber technology interfaced with custom-designed transceivers from IBM Research (Yorktown Heights, NY), using custom-designed VCSELs and photodiodes from EMCORE (Albuquerque, NM). It exceeded both the previous transmission length record by 60 meters and the previous data rate record by 50 percent.

“This demonstration illustrates the viability of multicore multimode fiber as a transmission medium for next-generation high-performance computer networks,” said Dr. Durgesh S. Vaidya, senior manager of R&D at OFS. “With advanced light sources such as the EMCORE custom arrays, systems designers will be able to achieve the extremely high transmission speeds predicted for future networks while increasing cable density with the opportunity for reducing packaging costs.”

The OFS fiber consists of seven graded-index multimode cores in a hexagonal array. Each of the six outer cores transmits at 20 Gb/s over 100 meters using EMCORE two-dimensional arrays of vertical-cavity surface-emitting lasers (VCSELs) and vertically illuminated photodiodes, fabricated, in a commercial process, with a geometry corresponding to the outer six cores of the fiber. The fiber’s 26 µm core size is directly compatible with the photodiodes needed for 25 Gb/s (20 – 30 µm diameter). The 20 Gb/s

VCSELs were flipped chip packaged on an IBM-designed transceiver package with 130 nm CMOS ICs, and the full link was characterized by IBM Research with all six channels running error-free simultaneously.

OFS believes the additional bandwidth density provided by the multicore fiber link over standard multimode links will help to enable efficient next-generation high-performance computers and datacenters, while the larger core sizes compared to single-mode fiber solutions serve to help keep packaging costs sustainable.

“The expected increase in demand for optical fiber cable in these applications will result in significant network design challenges,” Vaidya said. “While bandwidth requirements continue to grow, network managers face considerable constraints on power and cost budgets, not to mention the physical space required by the fiber cabling. Increasing the bandwidth available on each fiber is a critical step in developing optical interconnects for future networks, not only for high-performance computing but also for data centers, another key growth market for optical fiber.”

About OFS

OFS is a world-leading designer, manufacturer and provider of optical fiber, optical fiber cable, connectivity, FTTx and specialty photonics solutions. Our marketing, sales, manufacturing and research teams provide forward-looking, innovative products and solutions in areas including Telecommunications, Medicine, Industrial Automation, Sensing, Government, Aerospace and Defense applications. We provide reliable, cost effective optical solutions to enable our customers to meet the needs of today’s and tomorrow’s digital and energy consumers and businesses.

OFS’ corporate lineage dates back to 1876 and includes technology powerhouses such as AT&T and Lucent Technologies. Today, OFS is owned by Furukawa Electric, a multi-billion dollar global leader in optical communications.

For more information, please visit www.ofsoptics.com.



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