

## **SWDM Alliance Formed to Support Duplex Multimode Fiber for Enterprise and Data Center Applications at 40 and 100 Gbps**

Organization to drive industry-wide adoption of Shortwave Wavelength Division Multiplexing (SWDM) technology, leveraging data center operators' investments in duplex multimode fiber infrastructure

**SUNNYVALE, CALIF., September 22, 2015** – Nine companies today announced the formation of an interest group to drive cost-effective utilization of duplex multimode fiber (MMF) infrastructure in cloud and enterprise data centers. The group, called the SWDM Alliance, will promote Shortwave Wavelength Division Multiplexing (SWDM) technology, allowing data center operators to continue to extract value from their existing duplex MMF deployments and extend the usable lifetime of newly deployed MMF.

Optical shortwave technology is enabled by vertical cavity surface emitting lasers (VCSELs), which are the most cost-effective lasers used in data center interconnections. VCSELs have been widely deployed at data rates up to 10 Gbps, and these deployments have driven large-scale installations of duplex MMF in enterprise and cloud data centers. A common technique to increase the data rate beyond 10 Gbps is the use of four parallel VCSELs, each running at 10 or 25 Gbps, transmitted over ribbons of parallel fiber. This technique requires eight fibers instead of two: four to transmit and four to receive. Installing such parallel fiber can represent an expensive overhaul to the fiber plant in the data center due to the need for increased fiber capacity in the trunk and also new patch cables to the optical modules.

By contrast, SWDM technology allows users to leverage their installed duplex MMF at 40 or 100 Gbps, using four VCSELs operating at different wavelengths multiplexed onto a single strand of MMF, thereby requiring only one transmit fiber and one receive fiber. This provides the ability to migrate from 10 to 40 or 100 Gbps, while minimizing overall power dissipation and maximizing transmission distance.

The founding members of the SWDM Alliance include CommScope, Corning, Dell, Finisar, H3C, Huawei, Juniper Networks, Lumentum, and OFS. The SWDM Alliance is an organization of companies dedicated to promoting the adoption of SWDM technology in order to provide cost-effective data center technology solutions. The SWDM Alliance is neither a standards organization nor a multisource agreement. The group does not address market segmentation, pricing, or competitive issues.

“Data center operators have already invested in duplex MMF infrastructure for their 10 Gbps deployments,” said Vladimir Kozlov, CEO of Lightcounting Market Research. “Using SWDM

technology to maximize the utility of those duplex deployments is an example of how equipment providers can offer innovative, cost-effective upgrades to the higher data rates that are now required.”

“Multimode fiber and VCSEL technology have been the workhorse of the modern data center,” added Steffen Koehler, Senior Director of Marketing at Finisar. “SWDM builds on this history of cost-effective, high-bandwidth interconnect technology to continue the evolution of these data centers.”

More information about the SWDM Alliance can be found at <http://www.swdm.org>.

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#### **About CommScope**

CommScope (NASDAQ: COMM) helps companies around the world design, build and manage their wired and wireless networks. Our vast portfolio of network infrastructure includes some of the world’s most robust and innovative wireless and fiber optic solutions. Our talented and experienced global team is driven to help customers increase bandwidth; maximize existing capacity; improve network performance and availability; increase energy efficiency; and simplify technology migration. You will find our solutions in the largest buildings, venues and outdoor spaces; in data centers and buildings of all shapes, sizes and complexity; at wireless cell sites; in telecom central offices and cable headends; in FTTx deployments; and in airports, trains, and tunnels. Vital networks around the world run on CommScope solutions.

#### **About Corning**

Corning Incorporated ([www.corning.com](http://www.corning.com)) is one of the world's leading innovators in materials science. For more than 160 years, Corning has applied its unparalleled expertise in specialty glass, ceramics, and optical physics to develop products that have created new industries and transformed people's lives. Corning succeeds through sustained investment in R&D, a unique combination of material and process innovation, and close collaboration with customers to solve tough technology challenges. Corning's businesses and markets are constantly evolving. Today, Corning's products enable diverse industries such as consumer electronics, telecommunications, transportation, and life sciences. They include damage-resistant cover glass for smartphones and tablets; precision glass for advanced displays; optical fiber, wireless technologies, and connectivity solutions for high-speed communications networks; trusted products that accelerate drug discovery and manufacturing; and emissions-control products for cars, trucks, and off-road vehicles.

#### **About Dell**

Dell Inc. listens to customers and delivers innovative technology and services that give them the power to do more. For more information, visit [www.dell.com](http://www.dell.com).

#### **About Finisar**

Finisar Corporation (NASDAQ: FNSR) is a global technology leader for fiber optic subsystems and components that enable high-speed voice, video and data communications for telecommunications, networking, storage, wireless, and cable TV applications. For more than 25 years, Finisar has provided critical optics technologies to system manufacturers to meet the

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increasing demands for network bandwidth. Finisar is headquartered in Sunnyvale, California, USA with R&D, manufacturing sites, and sales offices worldwide. For additional information, visit [www.finisar.com](http://www.finisar.com).

### **About H3C**

As an innovative IT infrastructure provider, H3C Technologies Co., Ltd. (H3C) is dedicated to research, development, production, sales and service of products and solutions. This includes a comprehensive portfolio of routers, Ethernet switches, wireless, network security, servers, storage, IT management systems, cloud management platform and other products. H3C has 38 branches in China and the company employs 5,000 people, with 55% engaged in R&D. Additional information can be found at [www.h3c.com](http://www.h3c.com).

### **About Huawei**

Huawei is a global leader of ICT solutions. Continuously innovating based on customer needs, we are committed to enhancing customer experiences and creating maximum value for telecom carriers, enterprises, and consumers. Our telecom network equipment, IT products and solutions, and smart devices are used in 170 countries and regions. Additional information can be found at [www.huawei.com](http://www.huawei.com).

### **About Juniper Networks**

Juniper Networks delivers innovation across routing, switching and security. Juniper Networks' innovations in software, silicon and systems transform the experience and economics of networking. Additional information can be found at Juniper Networks ([www.juniper.net](http://www.juniper.net)) or connect with Juniper on Twitter and Facebook.

### **About Lumentum**

Lumentum (NASDAQ:LITE) is a market-leading manufacturer of innovative optical and photonic products enabling optical networking and commercial laser customers worldwide. Lumentum's optical components and subsystems are part of virtually every type of telecom, enterprise, and data center network. Lumentum's commercial lasers enable advanced manufacturing techniques and diverse applications including next-generation 3D sensing capabilities. Lumentum is headquartered in Milpitas, California with R&D, manufacturing, and sales offices worldwide. For more information, visit [www.lumentum.com](http://www.lumentum.com).

### **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 Communications, 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 multibillion dollar global leader in optical communications. For more information, please visit [www.ofsoptics.com](http://www.ofsoptics.com).

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