Passive Optical Networks: Moving Beyond the LGX Form-Factor

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Traditionally, products have gone down the path of modularity for two reasons: cost and/or ease of replacement without effecting existing services. When the LGX form factor was first created for optical splitters, it made sense to have a modular approach for the first reason and to a lesser extent, the latter reason. When optical splitter modules were first put into the LGX form factor, the cost per splitter was considerably higher than it is today. Therefore, inserting modules into a chassis became a cost effective way to "grow" as needed. At the same time, the quality of those modules was not as high nor as repeatable as it is today, so despite any changes being service effecting (passive elements are not capable of protection switching around an outage) having the ability to replace the modules was also a key advantage.

Current Requirements & Challenges

Today, the cost of optical splitters has significantly dropped while the quality has improved, negating the previous advantages of the LGX form factor. In fact, as networks grow exponentially in bandwidth, they are decreasing exponentially in physical footprint due to virtualization and cloud technologies. The driving factors behind this market shift have been related to the space available for service providers and data centers to offer the services their customers need. For this reason, the LGX form factor no longer works. Taking up 4RUs in a rack (at a minimum) is unacceptable for passive elements in today's networks, yet this is what is required for a modest number of LGX splitter modules. Even with the maximum number of optical splitter modules installed in the highest density 4RU LGX rack, the total number of splitters is limited to only 128.

The Solution

Recognizing this market shift, M2 Optics has recently launched its **SplitLight™ High-Density Platform (HDP)** family of products. Each platform, or chassis, is only **1RU**. Unlike, traditional approaches that have bulkhead modules, the SplitLight™ HDP uses a patent-pending 3D approach to provide the industry's most dense solution in a single rack unit. As a result, up to 192 splitters can be installed in a single, SplitLight™ HDP. While the SplitLight™ HDP provides significantly more density per RU than an LGX solution, it also maintains the flexibility of those solutions in terms of chassis depth, flexible mounting options, and both front and rear connector customization.

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