LightVerse® Combo Panel Application Brief

Mixing Copper and Fiber in Data Centers and Intelligent Buildings

In the world of Intelligent Buildings (IB) and Data Centers (DC), copper and fiber cabling are widely recognized as the primary media types for network connectivity. The ability to seamlessly integrate these two types of connectivity solutions offers a multitude of installation options to address various cabling applications, network topologies, and equipment connectivity requirements. This application brief will focus on two mixed media cabling scenarios with one serving an IB design and the other an Artificial Intelligence (AI) design in the Data Center.

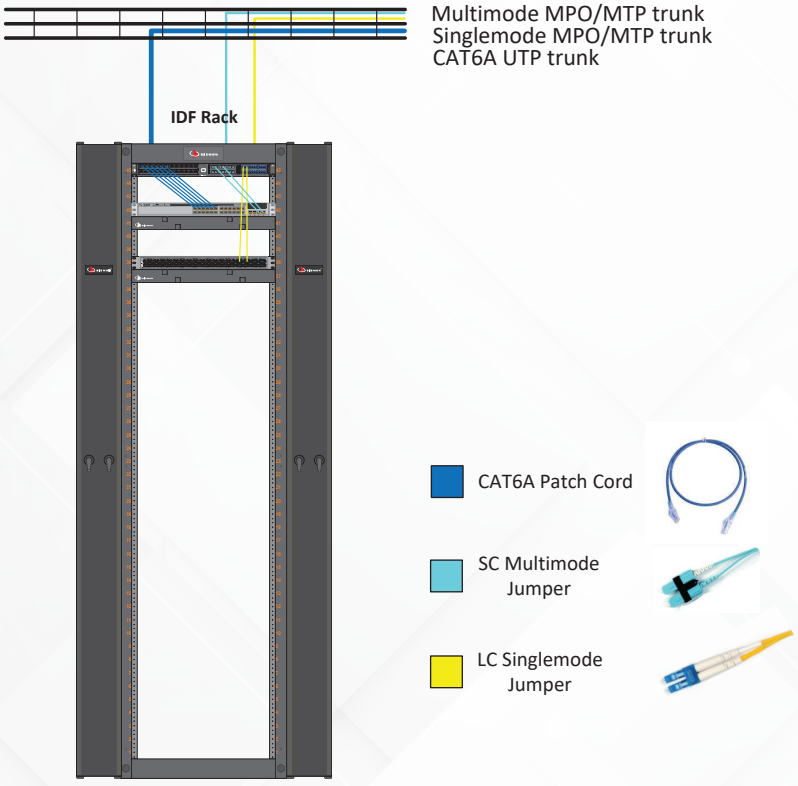

Figure 1

On the left, Figure 1 shows an intermediate distribution frame (IDF), typically located in a telecom closet, connecting a floor in a building to the main computer room. The IDF rack has multiple computer switches supporting both ethernet and Power over Ethernet (PoE).The IDF might also have network management and monitoring hardware to help support the network. The compute equipment requires fiber connectivity (singlemode and/or multimode) for network application processing and CAT6A copper connectivity for the PoE and network monitoring applications.

At the top of the rack is a LightVerse® Combo Patch Panel. The combo panel has four openings to accept different copper and fiber connectivity solutions. The copper adapter plates support Cat6, Cat6A and Cat6A Shielded outlets with copper cabling. The fiber solutions include LightVerse Plug and Play MTP to LC transition modules, LightVerse adapter plates (available in LC, MTP, SC, ST and FC connectors), LightVerse splice cassettes and LightVerse TAP modules for network performance monitoring.

Figure 2 is a close up view of the 1U LightVerse combo panel providing connectivity for Cat6A copper, OM3 multimode with SC connectors and OS2 singlemode with LC connectors in the IDF rack. The combo panel has 24 ports of Cat6A copper to support ethernet and PoE connections. It has six SC ports of multimode fiber for floor IDF to floor IDF connections. And it has twelve LC ports of singlemode fiber for building to building connections.

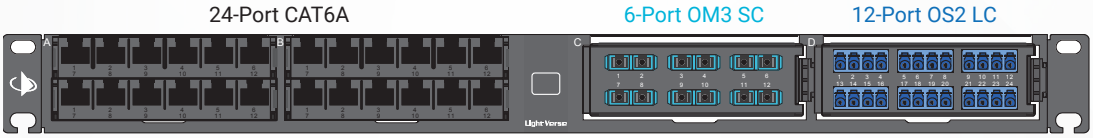

Figure 2

The second application is for connectivity supporting an AI deployment in the Data Center. When AI was first introduced into the market, most if not all connections from switch to switch and switch to node (server) were accomplished with direct connect point to point cables. As these AI architectures were deployed, installers and end-users had a difficult time managing all the cables required to connect all the devices together. This bottleneck in the deployment and management of the cabling systems were relieved by using patch panels.

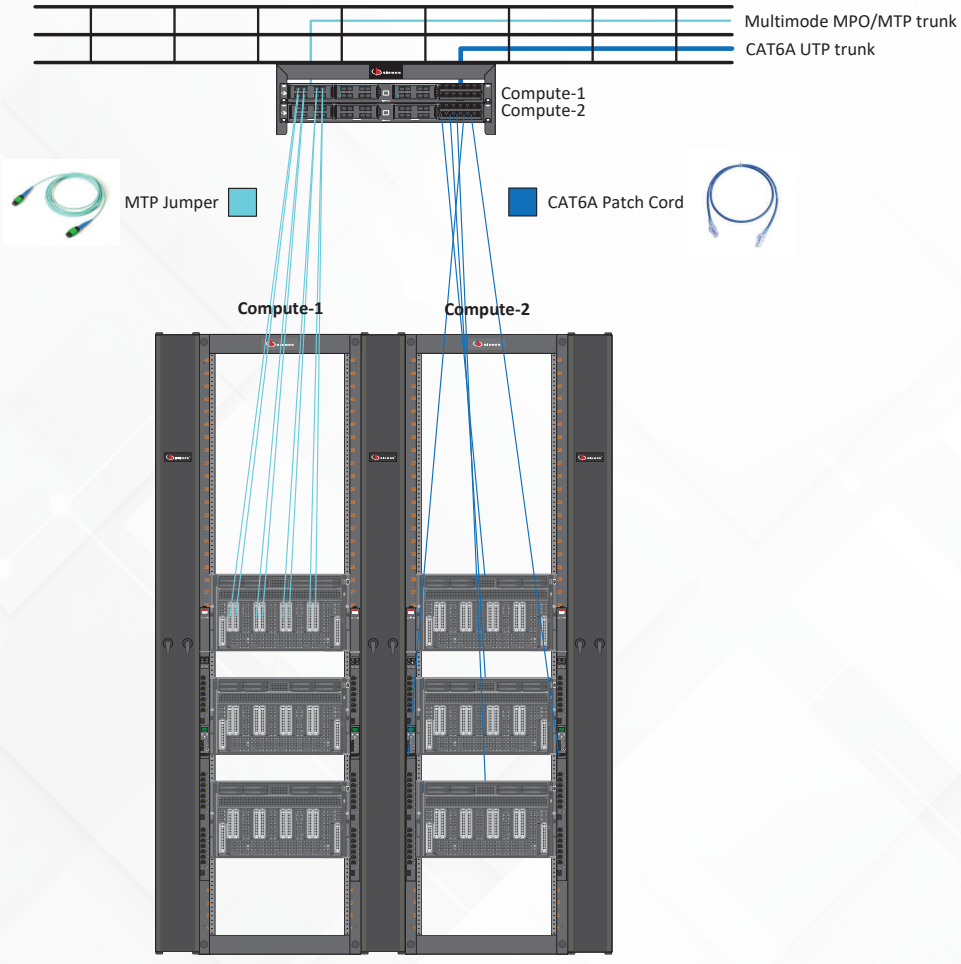

Figure 3

Figure 3 shows an AI design connecting six nodes or servers out of the two compute cabinets back to the network cabinets where the switches are located. Each node has eleven cables and requires eight Compute connections, one In-Band management connection, one Storage connection and one Out-of-Band connection. The Compute, In-Band and Storage connections are with MTP/MPO connectors. The Out-of-Band connections are with Cat6A RJ45 connectors.

Figure 4 is a close-up view of the two 1U LightVerse® Combo Patch Panels. Each combo panel has four openings and connects one cabinet. Each combo panel has three 8-port MTP/MPO adapter plates for 24 ports to connect into the three AI node compute ports, In-Band Management ports and Storage ports. Each combo panel also has twelve Cat6A UTP ports for Out-of-Band Management, PDU monitoring and other Data Center Infrastructure Management (DCIM) connections.

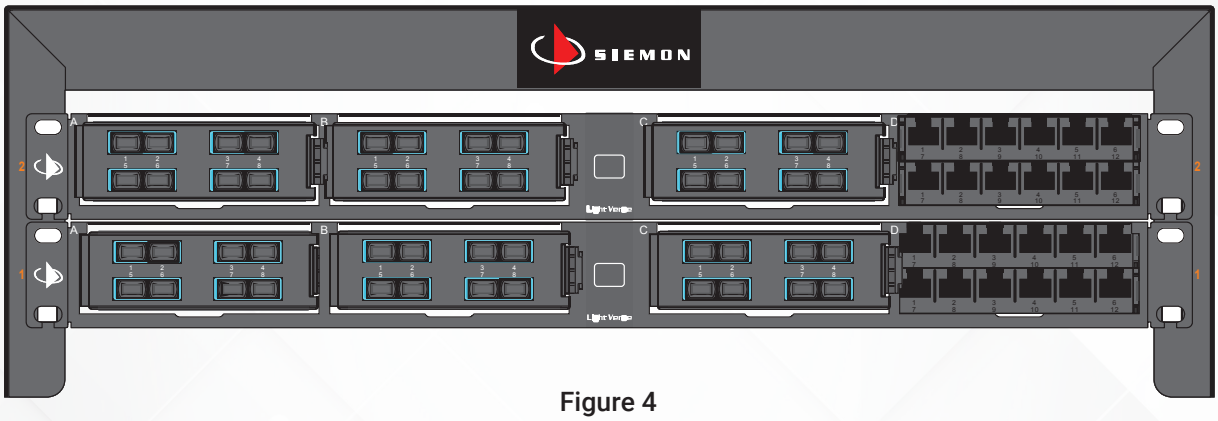

Figure 4

Siemon offers a wide range of high density solutions to support every network application. In addition to the LightVerse Combo Patch Panel, Siemon offers fiber only patch panels, full fiber enclosures and a complete line of copper only patch panels. Please reach out to your local Siemon sales or technical representative to learn more about how Siemon can help move your deployments into the future.

For more information visit: https://go.siemon.com/lvcombopanel-web

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FLR_LVComboApplicationBrief_RevA 07/24