

On-Demand Fiber to the MxU

Fiber deployed in a passive optical network configuration in MDUs allows service providers to reduce the cost of ownership and address current and future demands.

By John George / *OFS*

Optical fiber to each living unit or office in buildings has become the preferred high-speed internet architecture. Fiber deployed in a passive optical network (PON) configuration offers a low total cost of ownership and capacity to support many decades of growing bandwidth demand. A single optical fiber has the capacity of hundreds of copper or coaxial cables, and the PON architecture lowers system costs by reducing actively powered network elements.

The challenge of routing fiber to units was met by revolutionary 2.5 mm bend radius fiber used in virtually invisible surface mountable cabling, factory-terminated plug-and-play systems, and very compact cables packing 12 fibers in just a 2 mm outer diameter.

These solutions are optimized for deploying fiber passing every unit in a building, a preferred approach when service providers expect relatively high take rates of 30 to 50 percent within one to two years, justifying the initial capital expense.

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ON-DEMAND DEPLOYMENT

Some service providers may be the second or third fiber entrant in a building, may deploy fiber to businesses in multitenant buildings, or may prefer to defer construction costs. These service providers can benefit from a system that reduces initial capital investment yet enables on-demand fiber deployment to subscribers.

One such system is known as MDU!Click. As shown in Figure 1, the initial deployment consists of an OSP cable-fed compact splitter enclosure in the building's main distribution frame (MDF) space and an ultra-compact riser cable passing through all floors. The first subscriber on each floor is connected by terminating a small module onto a single fiber in the riser cable and deploying a single drop cable or invisible drop fiber to the subscriber.

FUTURE-PROOF CAPABILITIES

As subscriber demand grows on each floor, the small, single-fiber port module can be transformed into eight ports by simply "clicking" on a 1x8 splitter module, as shown in Figure 2. The horizontal optical cabling can be deployed as a single plug-and-play 3 mm cable or as an invisible surface-mounted hallway system.

This system offers significant benefits compared with conventional approaches:

- Up to 80 percent less space needed for riser cabling
- Riser pre-positioned on every floor from the initial build

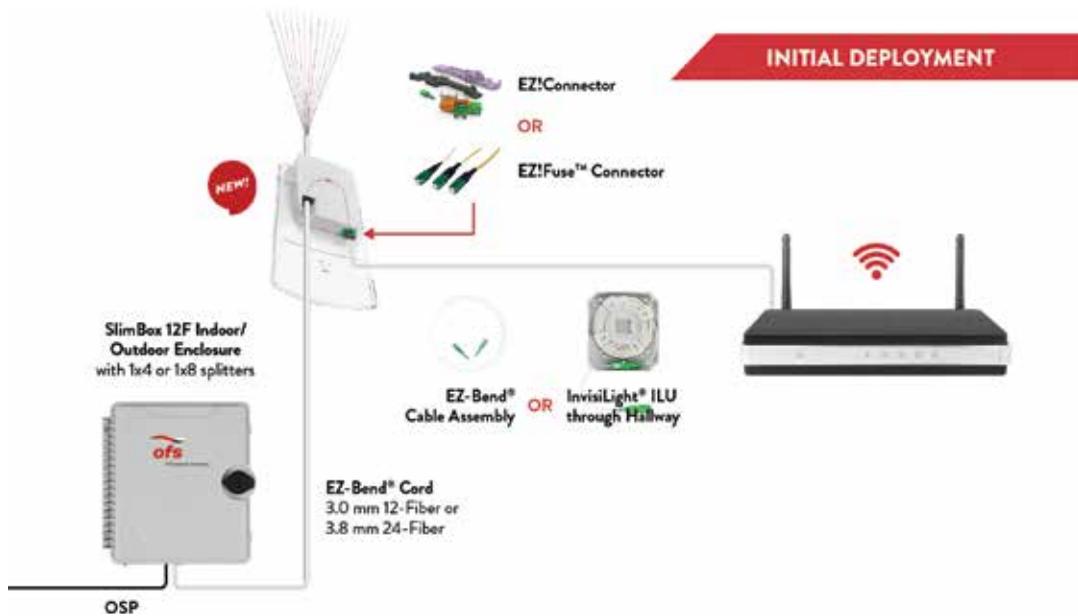


Figure 1 – On-Demand Fiber to the MxU – Initial Deployment

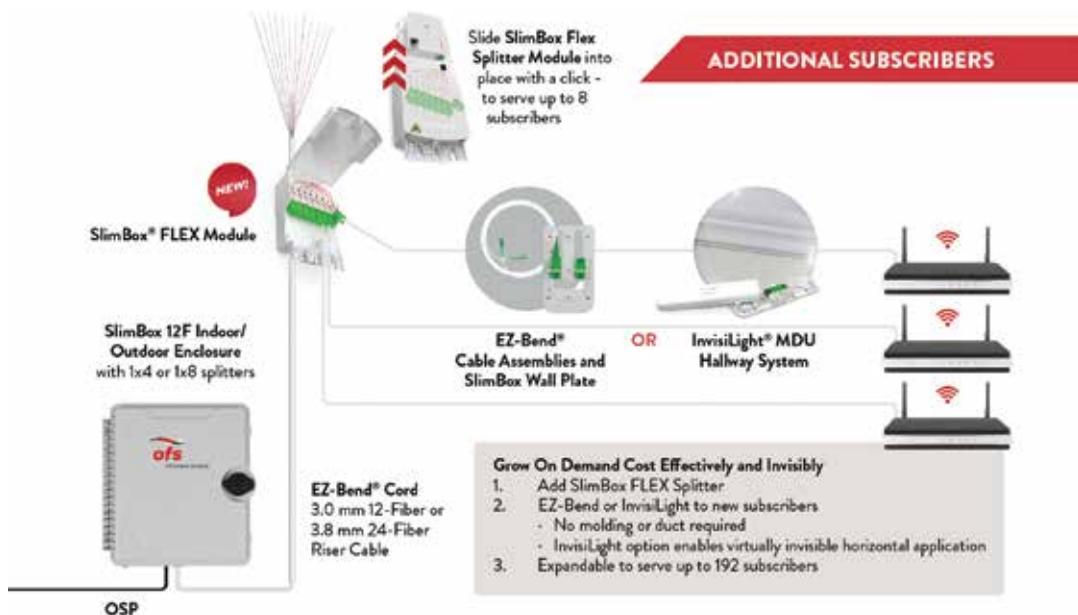


Figure 2 – On-Demand Fiber to the MxU – Adding Subscribers on a Floor

- Splitter and horizontal cable deployment aligned with subscriber acquisition
- Invisible surface-mounted cabling options
- Factory-terminated or field-terminated based on customer preference
- Riser and drop cables with 2.5 mm

bend radius fiber may be stapled with no bend loss concerns

Solutions to bring optical fiber quickly, cost-effectively and invisibly to every living unit or office in buildings during the initial build are now available. Service providers preferring an on-demand fiber deployment that defers building costs to align with subscriber

acquisition now have a new option with the MDU!Click system. ❖

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