

Alternatives to Increasing Throughput

More and more devices that require bandwidth are showing up in schools, offices, and factories every day. In schools, children are using Chromebooks to access research sites, each one requiring access and bandwidth. In offices, there is the bring your own device phenomenon, each one requiring a connection. Sensors are being widely deployed on the factory floor, each one needing a connection to factory automation software. The common requirement with all of these devices: bandwidth.

There are many hurdles one has to overcome to increase the bandwidth of an existing fiber backbone. Although it sounds easy when one says, "Just replace the old multimode fiber with new singlemode fiber", it is rarely that easy. Replacing the fiber can be intrusive, disrupting the normal operations in the office or factory floor. The dust that is generated would certainly be a problem in some vertical markets, e.g., hospitals. The fiber replacement project could span over several days, or worse, if the installer runs into unforeseen problems. While all of this is going on, the existing links are brought down which means all of the devices requiring bandwidth are rendered useless. In addition to all of this, replacing existing fiber backbone is an expensive proposition.

Use Parallel Fibers	Deploy New Fiber	Mode Conditioning Patch Cords	Panduit's OneMode Link
Parallel fibers light up dark fiber	Replace existing fiber SMF	Mode conditioning patch cords reduce modal dispersion	OneMode-Link eliminates modal dispersion

Ease of Installation

Easy	Hardest	Easiest	Easy

Installation Time

Hours	Days	Hours	Hour

Cost

Low	Highest	Lowest	Medium

Reach

33m @ 10G	>10km at 10G, 25G and 100G	200m at 10G and 25G	<10km at 10G, 25G and 100G

Issues

<ul style="list-style-type: none"> Number of dark fibers available may not meet desired throughput needs 	<ul style="list-style-type: none"> Costly, a major construction project; long lead time to procure fiber to install 	<ul style="list-style-type: none"> Unstable solution providing poor performance 	<ul style="list-style-type: none"> Requires fusion splicing
---	--	--	--