

OneMode™ Supporting Products

Getting to the cloud, Wi-Fi 6 wireless access points and security cameras, are putting stress on your campus fiber backbone infrastructure. Replacing a multimode campus backbone is costly, time consuming, and heavily burdensome. In some cases, it may even be a health hazard to if asbestos remediation is involved.

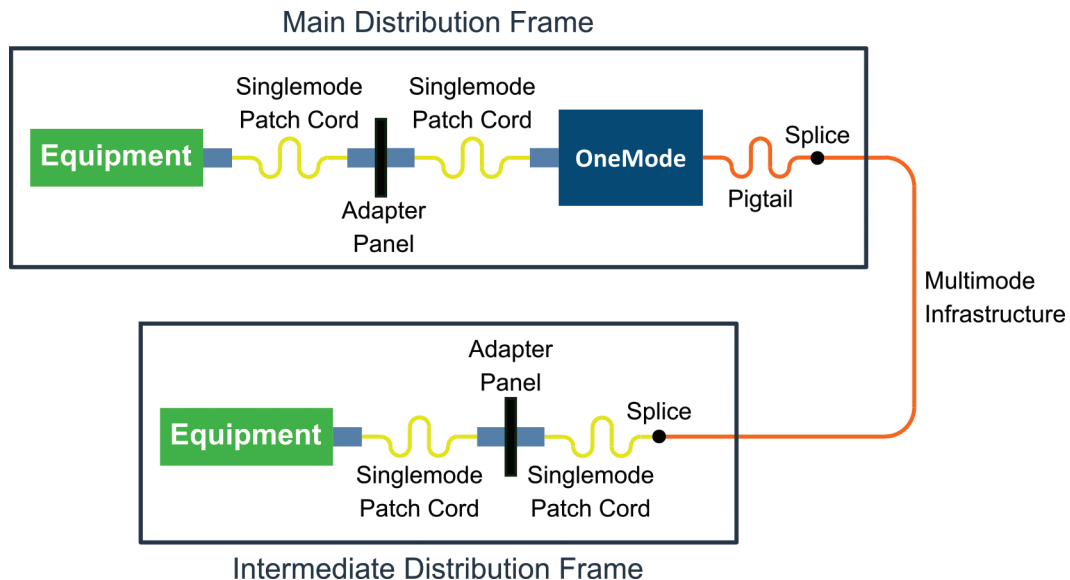
OneMode™ brings new life to your existing multimode fiber infrastructure. It allows you to deploy and take advantage of new devices, applications and services, without removing and replacing your existing multimode backbone. OneMode™ enables using singlemode optical modules over your existing multimode deployment. This means you can deploy the bandwidth you need: 10G, 40G, and beyond.



Typical OneMode™ Installation

OneMode™ is typically installed in a multimode fiber (MMF) link between a main distribution frame (MDF) and an intermediate distribution frame (IDF).

At the MDF, OneMode™ is connected to the equipment containing the singlemode optical modules via singlemode patch cords. OneMode™ is attached to the multimode infrastructure by fusion splicing the multimode pigtails exiting from the rear of the unit onto the existing fiber. Given that OneMode™ is spliced onto the existing infrastructure means that one can think of OneMode™ as part of the permanent link infrastructure, effectively turning the multimode infrastructure into a singlemode infrastructure. Best practices suggest that OneMode™ would not be directly connected to the equipment at the MDF, but rather one would employ a fiber patch panel between OneMode™ and the equipment. This prevents potentially damaging the permanent link if one performs moves, add, or changes at the MDF.



At the IDF, a singlemode pigtail is fusion spliced onto the multimode fiber infrastructure. That singlemode pigtail could be directly connected to the equipment at the IDF, but again as at the MDF, that pigtail should be treated as if it is part of the permanent link and it is recommended that one use a patch panel and patch cords instead of connecting directly to the equipment.

This guide is intended to help the end-user customer and/or the installer of OneMode™ identify additional products that support OneMode™ deployment.

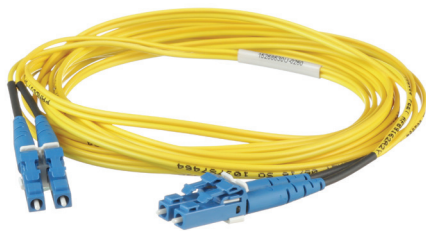
Patch Cords, Pigtails and Connectors

Moving from a multimode infrastructure to a singlemode infrastructure will require using singlemode patch cords to connect OneMode™ to your new equipment or patch panel, and to connect the upgraded multimode infrastructure at the far end.

If you are deploying new singlemode SFP+ based optical modules, they will require patch cords or pigtails with duplex LC connectors. But, if you are connecting to legacy singlemode equipment, or if you wish to reuse a SC based fiber patch panel, Panduit does offer LC-to-SC patch cords and SC pigtailed connectors.

Panduit also offers splice on LC or SC connectors for those end-users or installers that prefer that method of termination over pigtails.

All of the patch cords and pigtails that are listed are OS2.

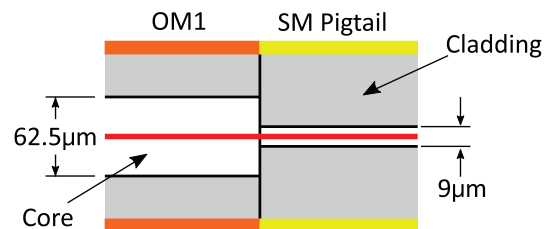


Duplex patch cord LC-to-LC

Singlemode Pigtail on Multimode Fiber?

In this case, yes.

In typical multimode applications, the laser source is either a LED or a VCSEL. Both of those lasers completely fill the core of the fiber, in this case the 62.6mm core of an OM1 fiber. If one spliced onto a singlemode pigtail, one would lose about 85% of the laser energy into the cladding of the singlemode pigtail.



OneMode™ is different.

It shapes the singlemode laser light so that it excites only one mode of the multimode fiber. In this case, virtually all of the laser energy is coupled into the singlemode pigtail.

Part Number	Description
F92ERLNLNSNM***	Duplex patch cord, LC-to-LC.
F92ERLN3NSNM***	Duplex patch cord, LC-to-SC.
F91BN1NNNSNM***	Single pigtail, 900mm buffer, LC.
F91BN3NNNSNM***	Single pigtail, 900mm buffer, SC.
F91ER1NNNSNM***	Single pigtail, 1.6mm jacket, LC.
F91ER3NNNSNM***	Single pigtail, 1.6mm jacket, SC.
F92ERLNNNSNM***	Duplex pigtail, 1.6mm jacket, LC.
F92ERSNNNSNM***	Duplex pigtail, 1.6mm jacket, SC.
FLCS2/9SOCU9BU	LC splice on connector.
FSCS2/9SOCU9BU	SC splice on connector.

***The length in 1 – 50 meters.

Splice Management

The installation instructions call for fusion splicing OneMode™ Fiber Pigtail to the existing multimode infrastructure. The box that is used to ship the OneMode™ Unit contains a splice tray large enough to contain all of the required splices, but small enough to easily fit on a shelf or attach to the rack within the MDF or IDF. If there are a large number of splices, or if one would like to store the splices in a more protected way, one may want to install a rack mount fiber enclosure and splice tray.

The Panduit® Opticom® Rack Mount Fiber Enclosure ensures network reliability by housing, organizing, managing, and protecting fiber optic cable, terminations, splices, connectors and patch cords. The enclosure is able to serve as a transition from backbone cabling to distribution switching, an interconnect to active equipment, or as a cross-connect or interconnect in a main or horizontal distribution area.



FRME1U



FOSMF

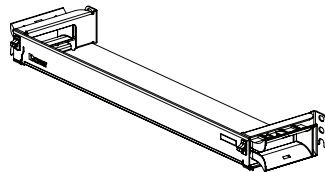
Part Number	Description
FRME1U	36 links, 1 RU.
FRME2U	72 links, 2 RU.
FRME3	108 links, 3 RU.
FRME4	144 links, 4 RU.
FOSMF	Fiber splice tray.
FSTK	Fiber splice tray kit.

Cable Management

There can be an amount of slack between the OneMode™ Unit and the entry point of the multimode fiber. Cable management and proper bend radius control will be needed, especially given that the multimode fiber is most not likely the type that is bend insensitive.

There are three types of cable managers that can be used with racks typically found to support MDFs and IDFs: vertical cable managers, horizontal cable managers, and open access horizontal cable managers. There are numerous options available with different heights, widths, and cable capacities. Since it would be too lengthy to list every part number of every option, only the base part number of the product family is shown.

In addition to vertical or horizontal cable managers, it may be necessary to employ slack spools. They are a convenient way to manage slack while ensuring a proper bend radius.



FLEX-FCM1UA



PWT75

Part Number	Description
FLEX-FCM1UA	HD Flex™ Front Cable Manager.
SRB19D7BL	7" rear strain relief bar.
SE75PS-CR0	Pan-Wrap™ Braided Sleeving 3/4" (19.1mm).
PWT75	Pan-Wrap™ Installation Tool for 3/4" braided sleeving.
FQRCM	Rear cable manager.
WMP Family	Horizontal cable managers.
CMPH Family	Open access horizontal cable managers.

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FBCB50--SA-ENG
 9/2020