Passive Optical
LAN guide

COMMSCOPE®

Optical LAN solution overview

CommScope's Optical LAN Solutions (OLS) offer a complete end-to-end cabling solution to support passive optical LAN (POL). POL is the enterprise-level architecture adapted from the service provider passive optical network (PON) technology, which has been used to deliver bundled voice, data and video services to the premises for more than 20 years.

In a POL architecture, the network consists of a core switch known as an optical line terminal (OLT) connected to an end device or optical network terminal (ONT) by up to 20 km (or more) of passive singlemode fiber-optic cabling. CommScope's OLS includes products designed specifically to support this technology in a simple, efficient and cost-effective manner.

Our OLS is highly intuitive and simple to design and deploy while remaining flexible enough to adapt to any network distribution challenge. All-plenum-rated construction along with preterminated plug-and-play connectivity streamline the design and installation process, eliminating the need for costly, time-consuming field terminations. Our patented Rapid Reel technology also significantly lowers the number of required parts and dramatically reduces deployment time. We also offer traditional field-termination capabilities where the use of preterminated cabling is not an option.

ARCHITECTURE DESIGN

More so than traditional point-to-point networks, POL designs can vary greatly depending on network requirements, architecture, building layout and economics. CommScope's OLS offers the designer an extensive portfolio to meet any unique distribution challenge. This brochure includes not only POL-specific products but a broad offering of more traditional fiber network connectivity components that work in conjunction with our OLS products to establish the most effective infrastructure for every application.

Infrastructure support for passive optical LAN can be broken into two "foundation" topologies. These are hub and terminal distribution and distributed splitter distribution. Each of these "foundation" topologies can be modified to suit any application and can also be combined into hybrid topologies to meet specific network requirements.
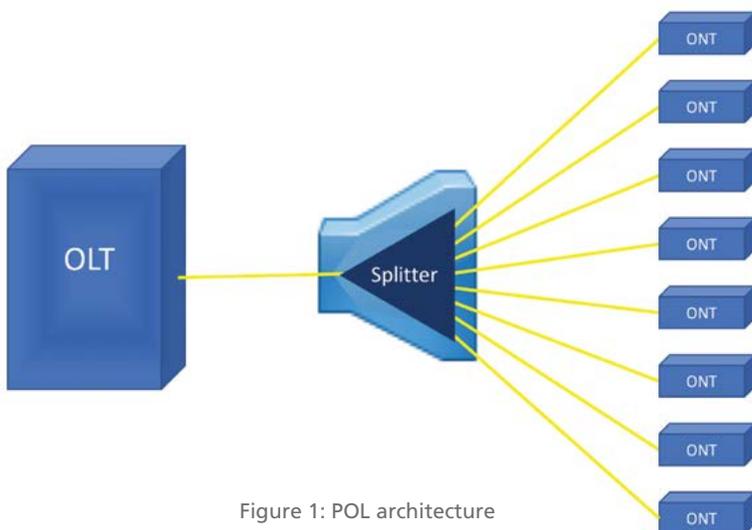
Figure 1: POL architecture
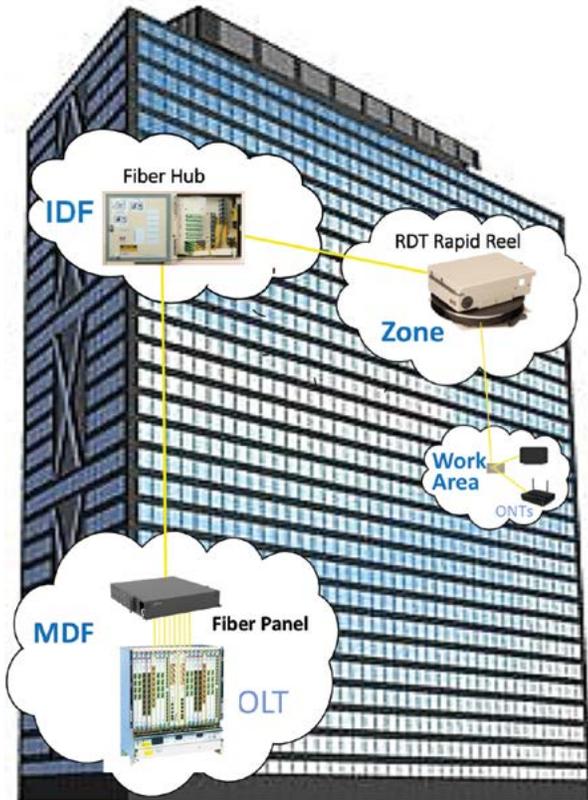
Figure 2: Hub and terminal architecture
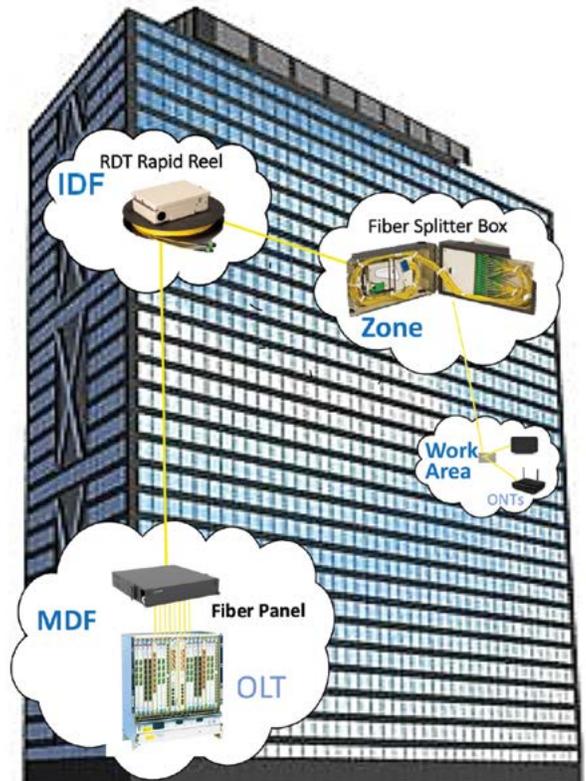
Figure 3: Distributed splitter architecture

Option 1: Hub and terminal

· Most efficient for medium to large deployments

· Optimal for next-generation optical LAN technology upgrades

· Flexible solution for high-bandwidth device (re)distribution

· Maximizes OLT port utilization

· Least floor space required

Option 2: Distributed splitter

· Lowest CapEx

· Great scalability

· Works well for smaller deployments

· Poor OLT port utilization

· Comparable floor space to FDH/FDT

· Less cable than rack mount

· Easy to design and understand

· Less efficient for large or complex deployments

Ordering guide

FIBER PANELS

CommScope's standard density (SD) fiber-optic panels are available in 1U, 2U and 4U sizes, with fixed or sliding trays, and accept LGX and ReadyPATCH®-style modules and adapter panels.

In addition to standard structured cabling, these panels can accept preterminated SC/APC-MPO modules for preterminated installations, as well as SC/APC adapter panels for traditional field termination.

Figure 4: SD fiber panel

Features:

· Modular design utilizing LGX footprint offers pay-as-you-grow flexibility

· Robust offering of preterminated, field-terminated or splicing cassettes

· Scalable up to 12 SC fibers per module

· Simplifies moves, adds and changes

Figure 5: SC/APC-MPO module

ORDERING INFORMATION			
DESCRIPTION		PRODUCT CODE	PART NUMBER
SD panel	SD 1U sliding fiber panel, accepts three (3) SC/APC-MPO preterminated modules or 3 SC/APC adapter panels, providing up to 36 simplex SC/APC ports	SD-1U	760231449
	SD 2U sliding fiber panel, accepts six (6) SC/APC-MPO preterminated modules or 6 SC/APC adapter panels, providing up to 72 simplex SC/APC ports	SD-2U	760231456
	SD 4U sliding fiber panel, accepts twelve (12) SC/APC-MPO preterminated modules or 12 SC/APC adapter panels, providing up to 144 simplex SC/APC ports	SD-4U	760231464
	SD 1U fixed fiber panel, accepts (3) SC/APC-MPO preterminated modules or 3 SC/APC adapter panels, providing up to 36 simplex SC/APC ports	SD-1U-FX	760231472
	SD 2U fixed fiber panel, accepts (6) SC/APC-MPO preterminated modules or 6 SC/APC adapter panels, providing up to 72 simplex SC/APC ports	SD-2U-FX	760231480
	SD 4U fixed fiber panel, accepts (12) SC/APC-MPO preterminated modules or 12 SC/APC adapter panels, providing up to 144 simplex SC/APC ports	SD-4U-FX	760231498
Adapter plates and modules	SC adapter plate with 6 SC duplex adapters (green)		559596-3
	SC/APC MPO cassette assembly—6 duplex ports (12 fiber)		1918447-1
SC APC connector field termination	LightCrimp PLUS SC APC connector kit **		2064184-1
** For more information regarding LightCrimp PLUS connectors and tools, please download the system overview here.			

Rapid Fiber™ distribution hub (iFDH)

CommScope's Rapid Fiber distribution hub organizes and administers optical fiber cables and passive optical splitters for enterprise optical LAN applications. The enclosures support plug-and-play termination with a cross-connect/interconnect interface that makes installation, maintenance, and changes faster and easier. The Rapid Reel feeder cable speeds installation time and conveniently stores slack inside the iFDH.

Features:

· Supports plug-and-play termination

· Can be either wall or rack mounted with the hardware provided

· Traditional swing-frame design allows superior rear access

· Includes Rapid Reel feeder cable

· Designed to meet NEMA-12 requirements

· UL 1863 Listed

Figure 6: iFDH

ORDERING INFORMATION*				
DESCRIPTION	FEEDER CABLE TYPE ***	DISTRIBUTION TYPE	FEEDER STUB LENGTH	PART NUMBER
72-port with 9 splitter ports	12-fiber plenum	6 MPO adapters	100 ft	OLH-MK072J00M0MKCA
72-port empty hub	No feeder cable**			OLH-MK072J00M0M000
288-port with 18 splitter ports			100 ft	OLH-MM288J00M0MKCB
			250 ft	OLH-MM288J00M0MKEB
	24-fiber plenum	24 MPO adapters	500 ft	OLH-MM288J00M0MKBB
288-port empty hub	No feeder cable**			OLH-MM288J00M0M000
432-port with 22 splitter ports	24-fiber plenum	36 MPO adapters	100 ft	OLH-MN432J00M0MKCB
			500 ft	OLH-MN432J00M0MKBB
432-port empty hub	No feeder cable**			OLH-MN432J00M0M000

Notes:
* Splitters are purchased separately; ordering information on the following page.
** See next section for MPO-MPO cable assemblies
*** LSZH options also available. Please contact CommScope for options.

Mini plug-and-play splitter modules

CommScope's mini plug-and-play splitter modules support centralized splitting architectures. The modules are available in a wide range of split ratios. The rugged packaging is built for high performance, while the true plug-and-play design reduces installation time.

Features:

· Bend-optimized fiber and ruggedized extreme temperature cabling

· Operating temperature range -55°C to +85°C

· Wavelength range of 1260–1635 nm

· Easy to insert and remove without affecting adjacent splitters

· UL 1863 listed

Figure 7: Plug-and-play splitter

Figure 8: Rack-mount splitter

ORDERING INFORMATION		
DESCRIPTION		PART NUMBER
Optical splitter module (mini plug-and-play)	1 x 8 splitter	OLS-MPP10866
	1 x 16 splitter	OLS-MPP11666
	2 x 16 splitter	OLS-MPP1P66
	1 x 32 splitter	OLS-MPP13266
	2 x 32 splitter	OLS-MPP12A66
1RU FMT rack-mount splitter	1 x 32 splitter	OPS-FMTSP-AJJ01
	2 x 32 splitter	OPS-FMTSP-GJJ01

Rapid Fiber distribution terminal

CommScope's Rapid Fiber distribution terminal (FDT) provides a compact, NEMA-12 rated solution for connecting optical fiber cables within enterprise environments and serves as a distribution/ consolidation point. It eliminates the need for splice cases and separate cable assemblies by integrating the Rapid Reel cable payout system. The use of factory-terminated and -tested MPO connectors instead of splicing provides a plug-and-play environment that reduces labor costs and speeds project completion. The Rapid FDT provides a lockable consolidation point and localized patch field, allowing for precise cable length customization in the field while reducing overall cable volume and simplifying routing from the FDH to the user area. The Rapid FDT's compact footprint enables it to be placed under raised floors, above ceilings, or wall mounted.

Figure 9: Rapid Fiber distribution terminal

Features:

· Built-in Rapid Reel technology allows for easy payoff of MPO stub

· Patented breakaway spool flanges reduce slack storage size to within the enclosure's footprint

· Utilizes reduced bend radius fiber

· UL 1863 listed

Figure 10: Mini RDT

ORDERING INFORMATION			
DESCRIPTION	STUB	FEEDER STUB LENGTH	PART NUMBER
Rapid Fiber™ FDT distribution terminal, 12-fiber loose tube plenum cable		100 ft	OLR-SJ12J00D1002A
		200 ft	OLR-SJ12J00D2002A
		300 ft	OLR-SJ12J00D3002A
Rapid Fiber™ FDT distribution terminal, 24-fiber loose tube plenum cable	MPO	100 ft	OLR-SJ24J00D1002A
		200 ft	OLR-SJ24J00D2002A
		300 ft	OLR-SJ24J00D3002A
		500 ft	OLR-SJ24J00D5002A
Mini-RDT 12-fiber: Lengths over 100 feet use external reel		200 ft	ODT-SM12J00D0619A
	MPO	300 ft	ODT-SM12J00D0929A
		400 ft	ODT-SM12J00D1229A
		500 ft	RDT-SM12J00D1529A

*Note: Other cable lengths available. Please contact CommScope for additional options.

Fiber splitter boxes

CommScope's fiber splitter boxes (FSB) are mini fiber distribution hubs that can be used for plug-and-play (PNP) or fusion splice applications.

When used as a plug-and-play box, they are ideal for uses such as lower count floors or buildings, extra capacity requirements beyond the standard fiber distribution hub (FDH), and when localized splitting or physical path redundancy (using a 2x32 split) is desired.

The same box can also be used to extend services beyond the primary building to other smaller buildings with limited users on the campus. In this type of application, the FSB is typically spliced to the OSP fiber cable connecting the buildings and would offer the optical splitting required to provide PON services to the second building.

These wall boxes provide a small footprint for splitting, terminating, and splicing. FSBs accept standard plug-and-play splitters and can be easily added after the wall box has been installed. FSBs accommodate 1x8, 1x16, 1x32, 2x16 and 2x32 splitters. Wall mounting provides significant space savings and the unique swing frame design allows for easy access to the back section of the wall box.

Figure 11: FSB indoor enclosure

Features & Benefits:

· Dual hinge design creates separation between rear splitter section and front patching access

· Splitters can be easily installed after wall box installation, allowing for separate purchase

· Provides up to 32 customer access ports per splitter

· Dual hinge provides small footprint on the wall while maintaining excellent hand access to connectors

· Accepts standard mini-PNP splitter modules (same as iFDH)

· UL 1863 listed

ORDERING INFORMATION		
DESCRIPTION	NOTES	PART NUMBER
FSB-32 indoor enclosure; with SC/APC adapters, 32-fiber distribution	No splitters, no splice trays	OSB-SBJ032000000
	No splitters, with heat-shrink splice trays	OSB-SBJ232000000
	(1) 1x32 splitter installed, no splice trays	OSB-SBJ032A10000
	(1) 1x32 splitter installed, with heat-shrink splice trays	OSB-SBJ232A10000
	2 x 32 splitter installed, with heat-shrink splice trays	OSB-SBJ232G10000

Optical fiber cables

The reduced bend radius singlemode cable assemblies are used to connect the user area to the Rapid FDT or when connecting the ONT to the wall plate at the user end of the optical LAN.

CommScope's singlemode reduced bend radius cable assemblies have a bend radius of 7.5 mm and are backwards compatible with standard singlemode fiber. CommScope offers ultra physical contact (UPC) or angled physical contact (APC) SC connector styles. These assemblies maintain tight tolerances regarding the geometry and concentricity of the ferrule to maintain low insertion loss values. All cable assemblies undergo stringent testing for both insertion loss and return loss at the factory before shipment, ensuring high quality.
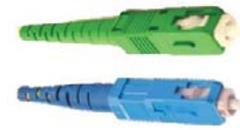
Figure 12: SC connectors

SIMPLEX DROP CABLES (3 MM DIAMETER)

ORDERING INFORMATION	
DESCRIPTION	PART NUMBER
SCAPC-SCAPC plenum yellow	FDWSASA31-JXMyyy
SCUPC-SCAPC plenum yellow	FDWSCSA31-JXMyyy

yyy = length in meters
Additional options are available; contact CommScope for assistance.
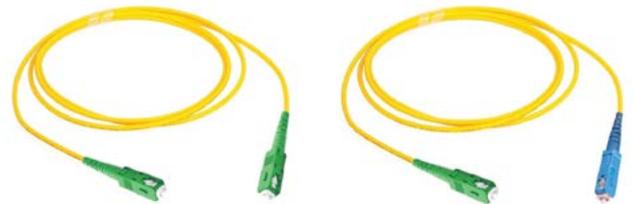
Figure 13: Simplex drop cables

SINGLEMODE REDUCED BEND RADIUS MULTIFIBER CABLE ASSEMBLIES

ORDERING INFORMATION	
DESCRIPTION	PART NUMBER
12-fiber MPO-MPO	MPA-NCNCJ50xxxF-NN where xxx = length in feet
24-fiber zip MPO-MPO	MPA-NCNCZ50xxxF-SS where xxx = length in feet

Figure 14: MPO trunk cable

Easy access zone enclosures and Hideout outlets

Hideout features:

· Double-gang box with single-gang cover recommended.

· May not fit all single-gang boxes.

· Hides and protects cable connections.

· Feeds from bottom to allow flush furniture placement.

· Fits standard electrical boxes.

· Each kit includes sub-plate, faceplate, adhesive labels, cable ties, and mounting screws.

· Media modules and icons must be ordered separately. Faceplates are plastic except for the stainless steel version.

· Accepts the following (see table for detailed load information):
    – Shielded or unshielded SL Series jacks
    – Simplex or duplex fiber-optic adapters
    – SL Series inserts

· Shielded SL Series jacks work in bottom row of faceplate only.

Snap-on cover

Screw-on cover

Figure 15: Hideout wall box

Easy access zone enclosure features:

· Economical with very low profile

· Supports a single adapter plate or MPO cassette

· Gasketed entry to reduce dust intrusion

· Separate mounting/strain relief plate

· Not plenum rated

· Captive fasteners

Figure 16: Easy access zone enclosure

· Can be magnet mounted

· Robust construction

· Internal bonding lug

· Nominal dimensions:
1.75 in (4.5 cm) H x 11 in (28 cm) D x 5.4 in (14 cm) W

ORDERING INFORMATION		
DESCRIPTION	NOTES	PART NUMBER
Hideout outlet kit, almond	Screw-on	503997-1
	Snap-on	503999-1
Easy access zone enclosure	Phillips head fasteners	1777215-1

Angled faceplates & SC APC simplex adapter

Features:

· Accepts simplex and duplex fiber connectors

· Accepts all AMP-TWIST jacks, SL Series jacks, and SL Series inserts

· Angled connector exits

· Protects connections

· Allows closer furniture placement

Figure 17: Angled faceplates

ORDERING INFORMATION						
DESCRIPTION	PORT COUNT	ALMOND	BLACK	GRAY	ELECTRICAL IVORY	ALPINE WHITE
Angled faceplates	2	1375155-1	1375155-2	1375155-4	1-1375155-1	1-1375155-3
	4	406185-1	406185-2	406185-4	1-406185-1	1-406185-3

ORDERING INFORMATION	
DESCRIPTION	PART NUMBER
SC simplex adapter—green	1499836-9

Figure 18: SC APC simplex adapter

Note: Additional fiber adapters and copper outlets available.

Please contact CommScope for detailed product information.

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and manage wired and wireless networks
around the world. As a communications infrastructure
leader, we shape the always-on networks of
tomorrow. For more than 40 years, our global
team of greater than 20,000 employees, innovators
and technologists has empowered customers in all
regions of the world to anticipate what's next
and push the boundaries of what's possible.
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