PRODUCT ARCHITECTURE GUIDE

AFL

Affordable, reliable and high-speed broadband is essential for driving economic development and improving your community's quality of life. The first step in implementing a successful broadband network is selecting the architecture that best meets your needs. AFL is proud to offer fiber optic broadband solutions designed for a variety of commonly used architecture types.

No matter which configuration you choose—Centralized Split or Distributed Split—AFL's fiber-to-the-home (FTTH) expertise ensures optimal solutions. We offer a carefully curated selection of the most widely-used preconnectorized products, specifically tailored to each architecture type. We have designed our comprehensive product portfolio to address critical challenges, including deployment speed, labor and cost efficiency, performance standards, future scalability and more.

A robust fiber network requires a seamless pathway from central office electronics to the customer premises. Available solutions span the following network areas:

1. **Central Office (CO)**
2. **Feeder/Distribution Cable**
3. **Fiber Distribution Hub (FDH)**
4. **Distribution Segment**
5. **Stubbed Terminals**
6. **Customer Premise**

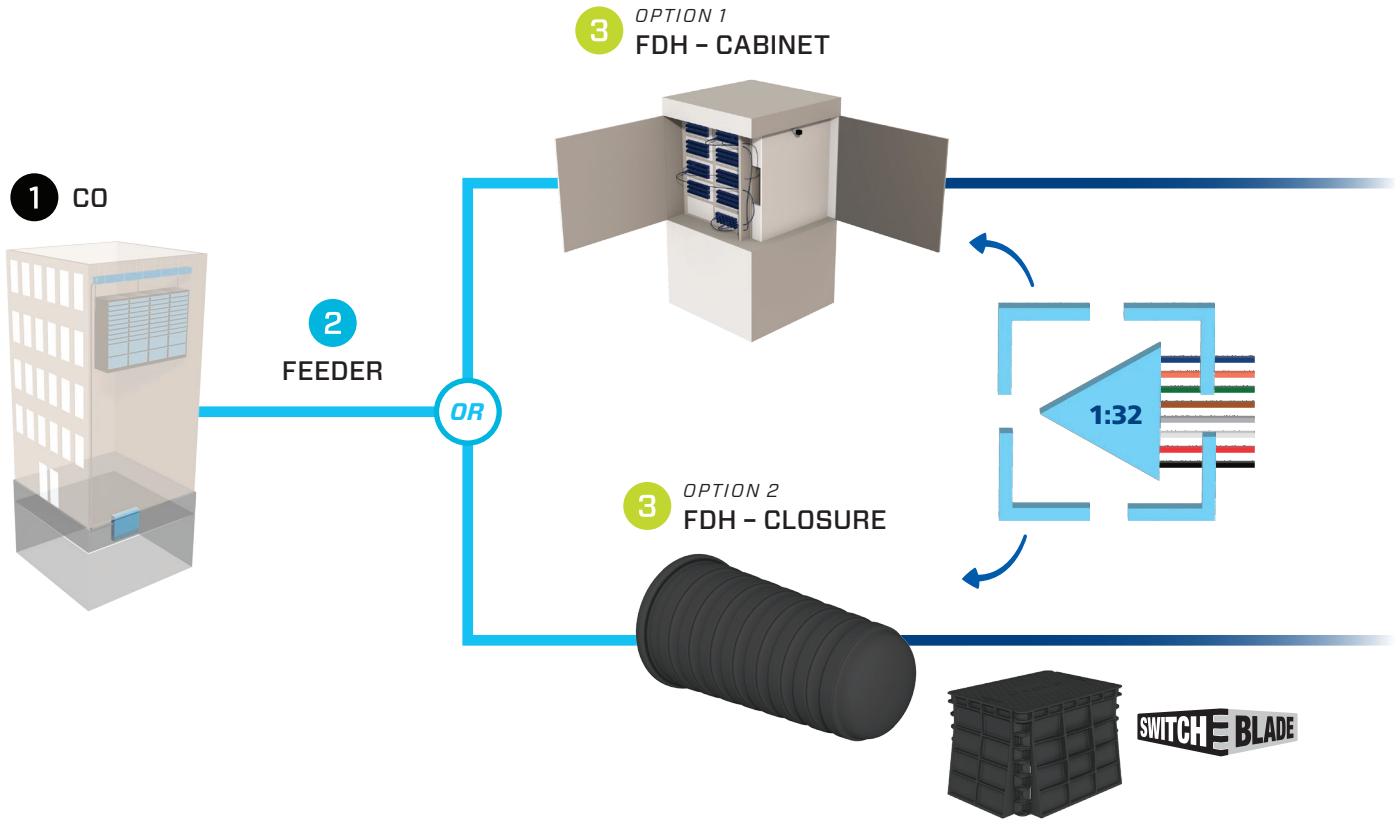
This document details several distinct methodologies for deploying the distribution segment of the network, contingent on the level of connectivity employed and the selected architectural framework.

DISTRIBUTION SEGMENT – CENTRALIZED SPLIT CENTRAL OFFICE 1 AND FEEDER CABLE 2

Despite the architecture or density, the selection of products for the initial three segments of a FTTH network remains consistent at the Central Office (1) and Feeder Cable (2).

Our Central Office solutions (1) streamline design and deployment with density and flexibility, while also providing the lowest total cost of ownership.

The Feeder Cable (2) functions as the network's backbone. Our innovative cables, designed for various environments, address specific application challenges, including limited duct space, harsh environmental conditions, physical stress and challenges relating to cable-entry concerns. The FDH (3) supports rapid subscriber activation and ensures error-free, long-term management of increasing take rates within cabinets or splice closures.



1 CENTRAL OFFICE (CO)

AFL has several options when it comes to building out a central office (CO). From our Xpress Fiber Management® (XFM®) patch panels to our Poli-MOD® Patch and Splice Modules, we have the products to give your Central Office (CO) the reliability and flexibility it needs.

FRAME	
Xpress Fiber Management (XFM)	XFM Patch Panel, 1-5RU
POLI-MOD (CASSETTES)	
Poli-MOD Patch and Splice Module	Adapter Plate and Pigtails, 6-24 Connector Ports, varying connectortypes available
JUMPERS	
Simplex Cable Assembly	Connectors include SC, FC, ST and LC. 3.0 mm, 2.0 mm, 1.6 mm and 900 µm simplex cables in riser and plenum are available

2 FEEDER CABLE

Regardless of the Right-of-Way (ROW), AFL has the fiber count and cable application that your network demands. For high fiber density applications, our Wrapping Tube Cable (WTC) is a great choice. For traditional loose tube our LE series shines with fiber counts ranging from 12-432.

When space is a premium, our MicroCore® offering has a wide array of options that allow you to make the most of the space available to your network. Lastly, when the power space is available, our All-Dielectric Self-Supporting (ADSS®) cable is a great option to provide pole placement flexibility.

RIBBON CABLE	
WTC	Ribbon cable (144-1728 fibers)
WTC Armored	Ribbon Armored Cable (144-1728 fibers)
LOOSE TUBE	
LE Series SJ	AFL Loose Tube Cable (012-288 fibers)
LE Series Gel-Free SJ	AFL Loose Tube Cable Gel-Free (012-288 fibers)
LE Series Gel-Free SJSA	Single jacket single armor Loose Tube Gel-free (012-216)
MICRODUCT	
LM-Series	Reduced Diameter MicroCore (12-432 fibers)
LM200-Series	Reduced Diameter MicroCore (24-432 fibers)
LMHD-Series	Reduced Diameter MicroCore (12-432 fibers)
ADSS	
Standard	Double Jacket ADSS (012-432 fibers)
Flex-Span®	Single Jacket ADSS (012-288 fibers)

3 FDH

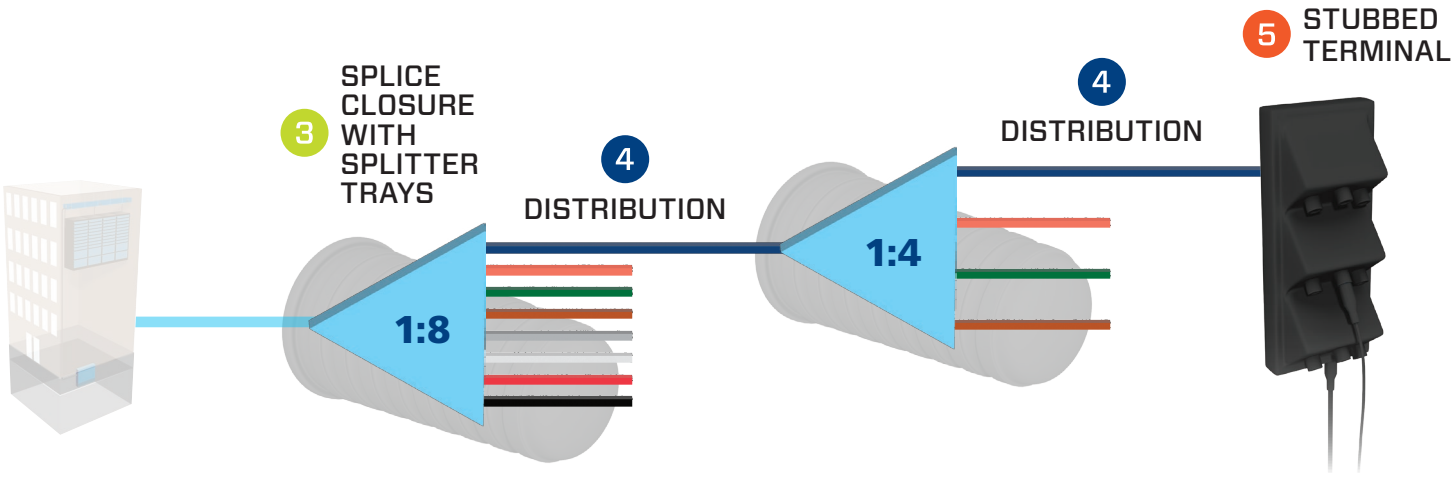
The Integrated Distribution Enabling Access Apparatus (IDEAA®) provides everything necessary to manage up to 864 fibers for an outside plant FTTx application in a pad-mount environment. For below-grade installations, the Apex® Fiber Optic Splice Closure is designed to house 1x32 splitters with preterminated SC APC adapters.

CABINETS	
IDEAA Cabinet	Exterior Distribution Cabinet
IDEAA Module	Splitter Module, SC, 1X32
IDEAA Module	Splitter Module, SC, 1X16
IDEAA Module	Splitter Module, SC, 1X8
IDEAA Module	Splitter Module, SC, 1X4
VAULT	
Switchblade®	Fiber Containment Vault Kit Base, No Extension, T15Lid 24"Wx36"Lx26"D
Switchblade with Extension	Fiber Containment Vault Kit Base, Extension, T15Lid 24"Wx36"Lx34"D
SPLICE CLOSURES	
Apex	Sealed Dome Closure, 6 Splice trays, 288-864 single, 1728-6912 mass (SWR), Direct Bury, Vault, Aerial, Pole/Wall
Apex Tray	Splice Tray with removeable splice chips
Apex Splitter Tray	Splice Tray with 1X32 splitter module
Apex Spitter Tray	Splice Tray with 1X16 splitter module
Apex Splitter Tray	Splice Tray with 1X8 splitter module
Apex Splitter Tray	Splice Tray with 1X4 splitter module

DISTRIBUTION SEGMENT – DISTRIBUTED SPLIT
SPLICE CLOSURES 3, DISTRIBUTION CABLE 4, AND STUBBED TERMINALS 5

As previously referenced, no matter the architecture or density, the selection of products for the initial three segments of an FTTH network remains consistent at the Central Office (1), Feeder Cable (2) and Fiber Distribution Hub (3).

Design decisions start with the distribution segment of a FTTH network. Whether you opt for a Centralized Split or Distributed Split, AFL has the cable and connectivity products to service your build.



3 SPLICE CLOSURE

Apex is a sealed splice closure designed for protecting optical fiber splices in both above- or below-grade applications in a butt configuration. Apex is a highly capable splice enclosure with capacity for any project.

Apex can be used as an FDH in centralized architecture or act as a splitter point in a distributed split architecture. With various splitter configurations, Apex can be configured to meet your project requirements.

SPLICE CLOSURES	
Apex	Sealed Dome Enclosure, 6 Splice trays, 288-864 single, 1728-6912 mass SpiderWeb Ribbon® (SWR®), Direct Bury, Vault, Aerial, Pole/Wall
Apex Tray	Splice Tray with removeable splice chips
Apex Splitter Tray	Splice Tray with 1X32 splitter module
Apex Spitter Tray	Splice Tray with 1X16 splitter module
Apex Splitter Tray	Splice Tray with 1X8 splitter module
Apex Splitter Tray	Splice Tray with 1X4 splitter module

4 DISTRIBUTION CABLE

Regardless of the ROW, AFL has the fiber count and cable application that your network demands. For high fiber density applications, our WTC is a great choice. For traditional loose tube, our LE Series shines with fiber counts ranging from 12-432 fibers.

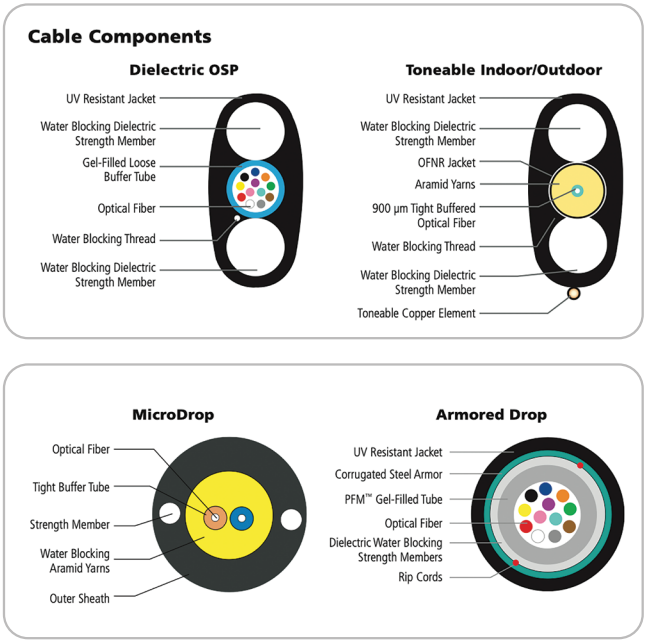
When space is a premium, our MicroCore offering has a wide array of options that allow you to make the most of the space available to your network. Lastly, when the power space is available, our ADSS cable is a great option to provide pole placement flexibility.

RIBBON CABLE	
WTC	Ribbon cable (144-1728 fibers)
WTC Armored	Ribbon Armored Cable (144-1728 fibers)
LOOSE TUBE	
LE Series SJ	AFL Loose Tube Cable (12-288 Fibers)
LE Series Gel-Free SJ	AFL Loose Tube Cable Gel-Free (12-288 fibers)
LE Series Gel-Free SJSA	Single jacket single armor loose tube Gel-free (12-216)
MICRODUCT	
LM-Series	Reduced Diameter MicroCore (12-432 fibers)
LM200-Series	Reduced Diameter MicroCore (24-432 fibers)
LMHD-Series	Reduced Diameter MicroCore (12-432 fibers)
ADSS	
Standard	Double Jacket ADSS (012-432 fibers)
Flex-Span	Single Jacket ADSS (012-288 fibers)

5 STUBBED TERMINALS

The AFL TITAN RTD® Multiport Terminal is a factory terminated OSP fiber terminal designed for quick and easy subscriber connections.

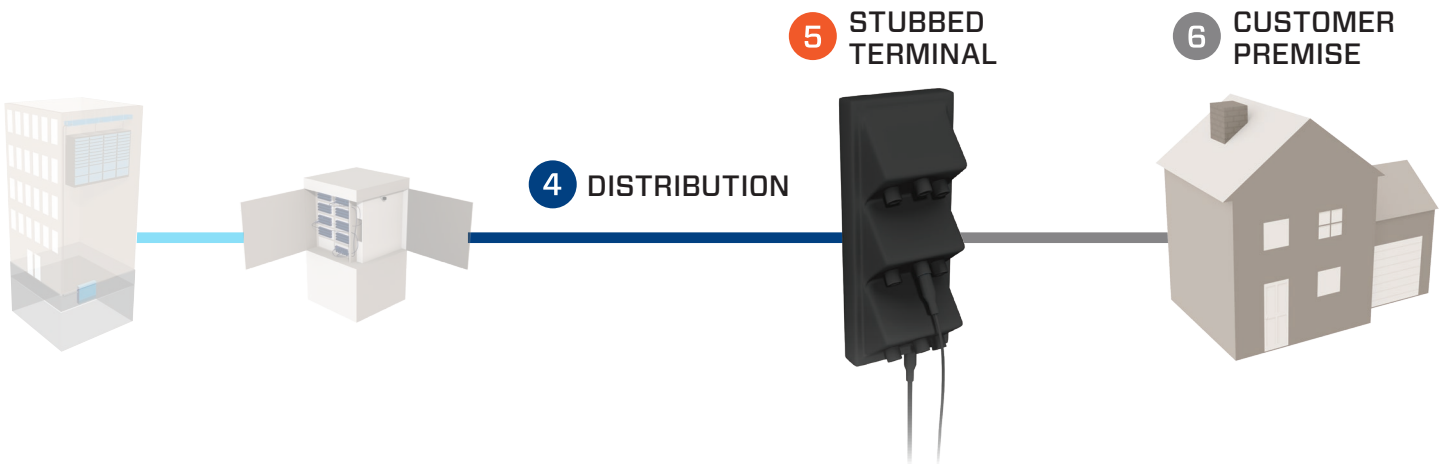
TITAN TERMINAL	
Terminal	4-port terminal, 25-2500 ft stubbed tail, dielectric, ADSS, Toneable, MicroDrop cable options
Terminal	6-port terminal, 25-2500 ft stubbed tail, dielectric, ADSS, Toneable, MicroDrop cable options
Terminal	8-port terminal, 25-2500 ft stubbed tail, dielectric, ADSS, Toneable, MicroDrop cable options
Terminal	12-port terminal, 25-2500 ft stubbed tail, dielectric, ADSS, Toneable, MicroDrop cable options



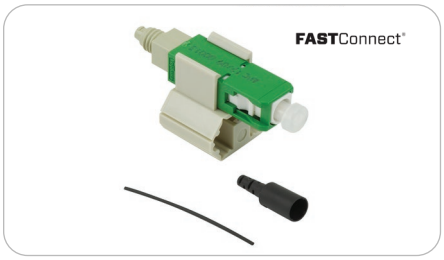
CUSTOMER PREMISE 6

No matter which architecture you choose for your project, the type of products used for the Premise (6) segment will largely remain the same.

There are typically three components used in the subscriber access at the premise. These include the subscriber drop, the connector and the demarcation box. This demarcation box can be used for testing and is typically found on the side of the customer's premise.



AFL TITAN RTD/AFL TRIDENT Interface



Field-Installable Connector

Demarcation Box

6 CUSTOMER PREMISE

AFL TRIDENT® factory-terminated drop cables are the final piece of the AFL TITAN RTD® FTTx System. The quarter-turn latching and sealing mechanism of the AFL TRIDENT connector provides quick and easy "plug and play" connections to AFL TITAN RTD multiport terminals, enabling lightning fast service subscriber connections with outstanding long-term reliability.

The preterminated AFL TRIDENT drop is available with a variety of cable stub options. Dielectric or toneable flat drop cables are available for underground or short span self-support applications while ADSS cable stubs are available for longer span self-support applications*. Round armored cables are available for rodent protection in aerial or direct buried applications. Lastly, a pushable/air-jettable MicroDrop cable is available for microduct jetting applications.

TRIDENT DROP	
TRIDENT Dielectric Flat Drop	Dielectric, 1-4 fibers, 25-2500 ft
TRIDENT Toneable Indoor/Outdoor	Toneable, 1-4 fibers, 25-2500 ft
TRIDENT Armored Drop	Armored, 1-4 fibers, 25-2500 ft
TRIDENT MicroDrop	MicroDrop, 1-4 fibers, 25-2500 ft
FIELD INSTALLABLE CONNECTORS	
FASTConnect®	Fiber Type: Single/Multimode, Connector Type: UPC, APC, Housing: SC, ST, LC
FIBER DEMARCATION BOXES	
OptiNID® 300 Series	Optical Demarcation Enclosure, 1 SC adapter
OptiNID Duo	Optical Demarcation Enclosure, 4 SC or LC adapters, 18 single fiber or 6 mass fusion splices

FIBER TEST, INSPECTION AND SPLICING PRODUCTS

Ensuring the reliability and performance of a fiber optic network is crucial. AFL offers a range of test and inspection products to streamline the testing process, enhance accuracy, and ensure compliance with industry standards. These products are essential for verifying the integrity of your network at various stages, from installation to maintenance.

FUJIKURA 90R, 90S+ & 45S FUSION SPLICERS

The **Fujikura 90R/90S+ Fusion Splicers** are ideal for high-density splicing tasks, such as splicing ribbon fibers used in PON architectures. The 90R can simultaneously splice up to 16 fibers, making it suitable for large-scale deployments. The 90S+ uses advanced core alignment technology, delivering precise and low-loss splices, which is crucial for maintaining high performance in Centralized and Distributed Split PON architectures.

The **Fujikura 45S** is designed for small to mid-fiber count applications, making it suitable for splicing individual fibers or smaller fiber bundles at locations such as the FDH cabinet. The precise splicing capabilities of the 90R and 45S ensure high-quality, low-loss connections, which are critical for maintaining the performance standards of PON networks.

FLEXSCAN® FS200 OTDR

AFL's **FlexScan FS200 OTDR** can quickly and accurately characterize a fiber network. Using its SmartAuto® mode, it quickly detects, locates, identifies, and measures network components and faults, ensuring the integrity of the fiber links. It quickly pinpoints breaks, bends, or poor splices, providing rapid fault location and comprehensive network characterization.

ONE-CLICK® CLEANERS

AFL's **One-Click Cleaners** are essential for maintaining the performance and reliability of fiber optic connections by quickly cleaning the end-faces of fiber optic connectors, both on jumpers and in adapters. Cleaning ensures connectors are free from dust, dirt, and oil and helps prevent network outages and performance degradation caused by dirty or contaminated connectors. This is crucial for maintaining the high-speed and reliable broadband service expected in FTTH networks.

FOCIS FLEX CONNECTOR INSPECTION SYSTEM

AFL's **FOCIS Flex Connector Inspection System** is designed to inspect fiber optic connectors, ensuring they are clean and defect-free. Regular use of the FOCIS Flex helps ensure that all connectors are properly cleaned and inspected, preventing network issues caused by dirty or damaged connectors. This supports the overall reliability and performance of the FTTH network.

FLEXSCAN® TS100 TROUBLESHOOTER

The **FlexScan TS100 Troubleshooter** quickly detects, identifies, and locates faults in the fiber network with the press of a button. It measures received power, link length, loss, and Optical Return Loss (ORL), displaying results with color-coded LinkMap® icons for easy analysis.

FLOWSCOUT® DOWNSTREAM PON POWER METER

The **FlowScout Downstream PON Power Meter** detects and measures power levels for GPON/EPON and RF Video or XG/XGS/10GEPON. At the customer premise, it ensures correct power levels during PON activation or troubleshooting, confirming that the service is provisioned correctly. It also measures insertion loss to FTTH subscribers, ensuring the integrity of the fiber link.

AFL provides a comprehensive range of fiber optic solutions to meet the diverse needs of your broadband network, ensuring seamless connectivity from central office to customer premises. Whether you require advanced distribution cables, reliable splice closures or efficient drop cables, AFL has the expertise and products to support your project's success and scalability.

Contact Us Today!

BRO-13166 2.12.2025