CLEARFIELD

Clearfield has flexible and scalable solutions to solve key challenges when bringing fiber into brownfield and greenfield multi-dwelling units.

Challenges

Every Multi-Dwelling Unit (MDU) is different. Each design has unique challenges, but tight spaces for fiber routing, architectural layout of the building and extensive labor requirements are common throughout every installation.

Due to space limitations, many brownfield installations require technicians to become creative with fiber routing and use existing cabling infrastructure whenever possible. Major reconstruction of existing buildings is never a good option.

Fiber optic network designs in new buildings have their own set of challenges. They start with the design. The building design has to focus on future-proofing the network as well as the lowering the cost of maintenance. Once the MDU is built, the ability to provide simple, fast, non-disruptive upgrades and maintenance is key.

The Clearfield Solution

Characterized by flexibility, scalability and low labor requirement, Clearfield's multi-dwelling unit product offerings are designed to reduce the time necessary to install the network. Speed of installation is maximized by the use of existing infrastructure, implementing end-to-end, plug-and-play functionality, as well as providing the ability to interconnect any type of pathway and media (conduit, microduct, flat fiber, microfiber).

The illustrated MDU fiber pathway is designed to accommodate various fiber network architectures, such as Active Ethernet or GPON in point-to-point or split architectures. The design will also offer complete restoration - lowering the maintenance and repair costs while maintaining the ease of network reconfiguration.

Key components of the solution include the **FieldSmart fiber management platform** and **FieldShield fiber delivery system**. FieldSmart lowers the cost of broadband deployment and maintenance by consolidating, protecting and distributing incoming and outgoing fiber circuits. The FieldShield fiber delivery system reduces the time it takes to install, turn-up and restore them. Future-proofing the network and subscriber scalability are achieved with the FieldShield Drop Wheel, Clearview Blue and xPAK cassette designs.

Network Application

A typical network architecture, as depicted in Diagram 1, requires the termination of service provider feeder fiber (F1) within 50 feet of the fiber entrance point. The fiber terminates into the demarc wall boxes or Fiber Entrance Cabinets (FEC). The F1 is then connected to the distribution fiber (F2 & F3) that serves two purposes:

- F2 - Connect each floor to the network (vertical riser network)
- F3 - Connect each apartment/condo on the floor to the network (horizontal network)
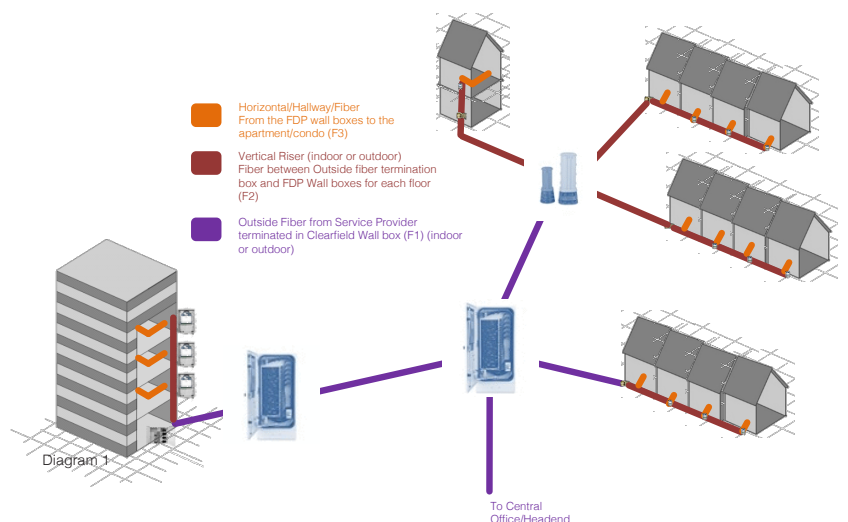
CLEARFIELD

51.4% quicker time to deployment
• Faster project completion; Lower cost of inventory

Up to 20% project cost reduction while maximizing the use of existing infrastructure
• Avoid installing new conduit by pushing microduct inside the existing conduit

Plug-and-play, out-of-the-box solution reduces installation time by 50%
• Splicing activity removed completely

Universal connectivity
• Wall boxes accommodate various media types, such as microducts, flat fiber, microfiber
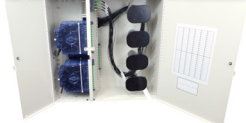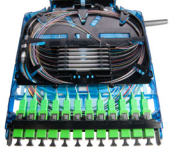
33% decrease in maintenance cost with repairable solution
• Easily replace broken fiber within existing microduct

Flexible design
• Flexible connectivity module options such as cassettes, splitters, drop wheels, tie panels, etc.

F1/MDF - Outside Fiber Termination

Outdoor Solutions	Indoor Solutions	Connectivity Options
• Scale from 12 to 48 ports using Clearview Cassettes • Patch only or in-cassette splicing • Point-to-point or split architecture supported • NEMA 4	• Scale from 36 to 144 ports using Clearview Cassettes • Patch only or in-cassette splicing • Point-to-point or split architecture supported • GR-326, GR-20, GR-409	• Scale in 12 port increments using Clearview Cassettes • Patch only or in-cassette splicing • Splitters up to 1 x 32 for split architecture • GR-326, GR-20, GR-409

F2 - Indoor or Outdoor Fiber Between F1/MDF and FDP/IDF Wall Boxes

Outdoor Microducts	Indoor Microducts	Fiber Optical Cables
• Outdoor aerial or direct bury • 14/10 or 10/6 (OD/ID) • Toneable options • High density polyethylene (HDPE)	• Fiber repairability and protection • Riser rated • Riser: 14/10 or 10/6 (OD/ID) • High density thermoplastic	• Variety of types to suit your application • Flexibility of configuration • Plug-and-play connectivity with factory terminated connectors

F3/IDF to Customer Premise Access Solutions

Small Count Delivery	Plenum Microduct	CPE Connectivity
• Scale with FieldShield Drop Wheel, Clearview Blue or xPAK Cassettes • Plug-and-play connectivity with factory terminated connectors	• Fiber repairability and protection • Plenum rated • Plenum: 12.7/10 or 10/6 (OD/ID) • High density thermoplastic	• Industry smallest wall box footprint • 0-300 feet of fiber with one SKU • Fiber flexibility for challenging routes