

WHITE PAPER



Next Gen
NETWORKS

Equipment Designs for Improving MDU and Rural FTTH Deployments



Equipment Designs For Improving MDU and Rural FTTH Deployments



The increase of fiber-to-the-premise (FTTP) deployments during the last few years has resulted in the installation of many fiber distribution hubs (FDHs) for providing services to residential family units in a variety of greenfield and brownfield application scenarios. Pushing fiber to single-family units has gone remarkably well in terms of available equipment designed for these types of deployments – but now the attention of service providers is being drawn to multi-dwelling units (MDUs) and rural applications.

Many FTTP deployments in MDUs and rural developments are presenting new challenges that demand changes from traditional equipment to newer products designed specifically to meet new requirements. For the FDH equipment, this growth process has made it increasingly evident that one size no longer fits all.

This paper will explore new FDH equipment designs that are meeting the challenges faced by service providers as they gear their FTTP networks for unique MDU and rural applications. It will look at ways to speed up the installation of FDHs to minimize the interruption to the surrounding tenants of MDUs. It will also compare size and density requirements necessary for the non-traditional deployment challenges posed by rural environments. Choosing the right FDH product – one with the necessary flexibility, accessibility and scalability – is important to avoid potential problems tomorrow.



Meeting MDU challenges

MDUs include various building types that require FTTP installations to be as flexible as possible. The four basic MDU types are high-rise (100 or more living units on 10 or more floors), medium rise (less than 100 living units on multiple floors), low rise or garden style (single living units on each floor), and horizontals (each unit resembling a single family unit).

Along with providing residences, these types of buildings also house hospitals, hotels, dormitories, and other businesses with multiple telecommunication service requirements within single structures. Obviously, the ability to install FDH type equipment quickly to minimize disruption to these various tenants becomes a critical decision for service providers – requiring products that are adaptable to multiple unique environments.

In a typical MDU environment, for example, an indoor FDH is located in the bottom of a multi-floor structure. In the case of a medium-rise or high-rise building, a fiber distribution terminal (FDT) is placed on each floor and connected down to the FDH with fiber cabling. Since the FDH is located inside the building, the potential for disrupting the lives of tenants is a critical issue for building owners.

Therefore, if a system can be installed quickly, the impact on tenants is minimized. The advantage of faster installation time is obvious when installing fiber in existing MDU structures. But there is also significant impact on greenfield applications. The faster installers can get in and out of the building, the faster owners can rent units and begin generating a return on their investment.

ADC has developed new MDU-friendly systems that integrate quick connections between FDTs and indoor FDHs using multi-terminal connections in place of traditional spliced cables. Both the F1 feeder and F2 distribution network can be rapidly deployed by simply snapping connectors together.

With speed of installation in mind, ADC has incorporated built-in fiber spooling capability in several off-the-shelf FDT products. Since distances vary between each FDT and the FDH, up to 500 feet of fiber can be spooled from any FDT and connected to the FDH with factory-installed, multi-fiber push-on (MPO) connectors. Remaining fiber is

stored on the spool and locked down with a shroud for added protection

Plug-and-play connectorization enables the easy connection of multiple fibers from every floor and saves considerable time and expense by eliminating the need for splicing and highly-skilled splice technicians. The plug-and-play feeder and distribution fields are an out-of-the-box solution for rapid deployment and easy service connections.

When designing its MDU-friendly FDT and FDH products, ADC incorporated the same benefits that have always been available in the company's traditional outdoor FDH – swing frames for easy accessibility, multi-splitter capability to support emerging technologies, parking lot storage for splitter outputs, and enough overall density to accommodate the entire structure.



Reaching rural developments

The second deployment environment that requires right-sizing the FDH equipment is in greenfield and brownfield applications that serve residential single-family units in new housing developments and existing rural neighborhoods. In many greenfield applications, for example, smaller lots along north/south and east/west streets can leverage the 144-fiber, 288-fiber or 432-fiber densities of traditional outdoor FDHs.

However, there is an emerging trend among many developers to opt for phased deployment of the FTTP network to reduce first-in costs associated with a one-time roll-out of services. Instead of reaching all 432 homes, they may begin with a first phase of 100 homes with three subsequent phases down the road.

ADC is accommodating this new trend by introducing a new right-sized pedestal-style FDH product for smaller or phased-in installation scenarios in rural residential deployments. The pedestal FDH is not as large – 12 to 96 fibers – and eliminates additional first-in costs associated with a hand-hole. Once more, the same features of traditional outdoor FDHs are re-packaged into a smaller pedestal-style unit for smaller and phased-in deployment scenarios.

Right size – Same Benefits

Both of these new right-size solutions – the rapid indoor FDH designed for MDUs and the pedestal-mounted FDH for small or phased-in developments – have one important thing in common. Both were developed to include the exact same features and benefits that are common to ADC's outdoor FDH product line.

Features like the easy-access swing frame, plug-and-play splitter architecture, splitter output parking lot, and fiber management attributes allow service providers the same benefits of a much larger FDH in a smaller, more adaptable, right-sized package. With the availability of this equipment, service providers can build faster, more efficient FTTP network architectures by choosing products that match every deployment challenge.



WHITE PAPER



Website: www.adc.com

From North America, Call Toll Free: 1-800-366-3891 • Outside of North America: +1-952-938-8080

Fax: +1-952-917-3237 • For a listing of ADC's global sales office locations, please refer to our website.

ADC Telecommunications, Inc., P.O. Box 1101, Minneapolis, Minnesota USA 55440-1101

Specifications published here are current as of the date of publication of this document. Because we are continuously improving our products, ADC reserves the right to change specifications without prior notice. At any time, you may verify product specifications by contacting our headquarters office in Minneapolis. ADC Telecommunications, Inc. views its patent portfolio as an important corporate asset and vigorously enforces its patents. Products or features contained herein may be covered by one or more U.S. or foreign patents. An Equal Opportunity Employer

106875AE 12/09 Revision © 2009, 2008 ADC Telecommunications, Inc. All Rights Reserved