



Richland-Grant Telephone Cooperative Relies on ADC's Hardened Connector Technology to Achieve Fast, Low-Cost Network Installation

CASE STUDY

BACKGROUND

Established in 1951, Richland-Grant Telephone Cooperative (RGTC) is an independent local exchange carrier serving customers throughout Southwestern Wisconsin. Based in Blue River, Wis., the company offers area-wide telephone service, along with long-distance access, wide-area paging, voice mail, and local- and wide-area networks. The company also is a member of Midwest Tel Net, a consortium of eight regional telephone companies that provide local Internet access throughout much of Southwest Wisconsin.

Since its inception, RGTC has remained committed to providing dependable, high-quality telephone service at the lowest cost possible. To meet its delivery goals, it's important that RGTC keep its communications technology on the cutting edge of emerging trends. Creating an efficient, scalable infrastructure capable of meeting its customers' long-term needs was one of the primary reasons the company decided to implement a fiber-to-the-home (FTTH) distribution network for several new housing developments in its service area, including: Blue River, Boaz, Sabin, Soldiers Grove and Gays Mills.

"We knew that our existing copper infrastructure would not be able to provide us with the bandwidth and flexibility we needed to meet the service demands of our growing customer base," said Dave Lull, general manager of Richland-Grant Telephone Cooperative. "Implementing a FTTH infrastructure in these new communities will allow us to efficiently deliver true broadband services and scale the network as needed to generate revenues more quickly."



CHALLENGE

The first community scheduled for fiber installation was Soldiers Grove. One of the key decisions that RGTC needed to make early in the planning stages of this initial project was selecting the access terminals that would provide a flexible and secure interface for the fiber network. As a key component in the distribution framework, it was critical that these access terminals support fast and easy installation and enable simple, low-cost upgrades and expansions as needed.

To meet its needs, RGTC selected ADC's OmniReach™ fiber drop cables and Multiport Service Terminals (MSTs). The MST access terminals, which enable use of connectors rather than splices for service turn-up, provide RGTC with a reliable interface and a cost-effective, centralized method of distribution. Use of connectors rather than splices at access terminals in neighborhoods allows RGTC to reduce the time required for installation and service activation, while helping to simplify technology upgrades in the future.

"We needed an effective and economical way to connect and distribute fibers in the field, but we also needed an interface that was durable and flexible enough to withstand the harsh, and often unpredictable, conditions in the outside plant environment," Lull said. "After reviewing the ADC products, we were convinced they would deliver the performance and cost-efficiency benefits we needed."



ADC's hardened connector and adapter

THE SOLUTION

The distribution architecture on this project consisted of main feeder cables from the central office, each of which is terminated at centralized hubs within the subdivision. The fiber optic ports at these hubs are linked by fiber distribution cables to the ADC MST access terminals deployed closer to smaller clusters of homes. An ADC fiber drop cable connects homes to access terminals, creating a fiber path that extends all the way from the CO to the optical network terminal at the home. This enables RGTC to deliver each customer with up to one gigabit of bandwidth.

Key benefits of the OmniReach access terminals include flexibility and ease of installation. MSTs incorporate a hardened connector technology that is designed to withstand extreme temperatures and conditions. The connectors are factory-terminated and environmentally sealed to provide a reliable interface for fiber drops. These attributes helped RGTC achieve a fast, low-cost installation with the ability to quickly scale services as needed.



Arrow on hardened connector shell ensures precise alignment of connector into optical port.

"The fiber connections can be easily expanded as new homes are built by simply adding new MSTs as needed," Lull said. "If the developer opens up another block of homes, we can just pop in another MST and begin burying the fiber drops to these homes as they're being built."

The ADC fiber drops are environmentally robust, yet extremely flexible, enabling rapid, factory-quality connections to the MST. Designed for both aerial and buried drop cable applications, the unique plug and play design saves labor time and expense while providing a durable and reliable service connection.

THE BENEFITS

The flexible mounting options and port configurations of the ADC MSTs also were key factors in their selection. Mounting options include pole, pedestal, hand hole, or stand to support both aerial and below grade applications. Available in 2, 4, 6, 8 and 12 port sizes, the MSTs allowed RGTC to purchase the optimum number of ports it needed for each deployment location, and the variety of mounting options gave installers the flexibility they needed to make adjustments on-the-fly.

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In addition, the hardened connector interface provided by the MST provides an intuitive test access point not found with spliced drop options. The connectorized terminal allows for simple access through insertion of a test cable into the hardened interface. In addition to providing easier, less time-consuming testing, the connector pairs offer lower skill-set requirements and much less risk to the fiber for testing.

Service turn-up is another area where the MSTs offer a distinct benefit over splicing.

“With new developments like Soldiers Grove, service turn-ups will not occur all at once,” Lull said. “With the connectorized MST interfaces, the distribution fibers are simply plugged into the splitter output and service turn-up becomes as simple as mating two connectors. This saves additional cost by using regular installers for service activation rather than relying on technicians or splicers.”

Not surprisingly, one of the biggest areas of savings for RGTC was the reduced labor cost for service turn-up. With other solutions, installers would have to splice to hook up homes, which would have involved the additional costs of more time and expertise. Instead, use of factory-

terminated connectors hardened for the outside plant environment reduced the cost of turning-up service for each home.

“The MSTs and the fiber drops were two of the most important components in terms of helping us meet our performance, flexibility and cost-efficiency goals,” Lull said. “Our goal was to implement a reliable, cost-effective connector solution and the ADC products definitely came through on all accounts.”



ADC's hardened connector drop cables

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