



GCI Delivers Broadband Business Services Despite the Cold

Fairbanks, Alaska may be one of the coldest cities on the planet. There are very few other cities with temperatures that routinely plummet to -40° F and have whole months that are below zero. Moreover, even fewer service providers have experienced the unique challenges that such harsh conditions can present for outside plant deployments.

GCI is Alaska's leading provider of voice, video and data communications services to residential, commercial and government customers. In 2007, the company implemented a GPON fiber-to-the-business (FTTB) network for commercial districts in Anchorage and Fairbanks. But, without equipment in the field that could withstand the frigid winter weather, failed circuits could cause inconsistent service and time-consuming and costly field repairs.

CASE STUDY



Challenge

GCI's team of technicians was accustomed to battling cold weather. However, the challenge was to find a set of fiber cross-connect cabinets it could deploy for the business networks that could withstand the severely cold temperatures.

The buffer tubes and connectors running through the cross-connect cabinets must be able to tolerate the extreme cold temperatures without shrinking, constricting or degrading optical levels. Signal quality can not be affected, and service interruptions can not be tolerated. GCI teams of technicians could ill afford dispatching to troubleshoot failed circuits under these conditions.

If a problem occurred the technicians could be exposed to the sub-zero conditions, requiring them to set up a heated tent around the cabinet. When the tent finally heated to an adequate temperature, they would be able to safely begin to repair any circuit issues or make any scheduled changes. It is extremely important that as the temperature rose, the fibers retain their standard working condition preventing circuit problems. Once the heated tent was removed, and the temperature subsequently dropped again, the circuits and fiber must still retain their normal operating characteristics.

The drastic temperature swings made troubleshooting the cross-connect cabinets an extremely risky process for GCI. An alternative would be to fusion splice fiber circuits in an effort to bypass the cross-connect points that could potentially cause problems. Unfortunately, this negated the flexibility and accessibility that a passive optical network can provide.

Selecting the Right Solution

GCI sought an outside plant fiber distribution hub that was proven to withstand the most frigid temperatures, and ADC's OmniReach® outdoor FDH 3000 cabinet was selected for a field test.

ADC engineers conducted extensive lab and real-world testing on its FDH 3000 cabinet at sub -60° F temperatures. When completed, ADC's team provided GCI with comprehensive, documented test results through graphs, photos, testing metrics, and other materials. ADC also joined the GCI engineering team in Anchorage for a detailed education about PON architecture, and an up-close, hands-on demonstration of the splitter cabinet.

In addition to withstanding the extreme temperatures, GCI found that ADC's solution would significantly reduce operating costs by minimizing technician time in the field. The OmniReach cabinet offered a swing frame for convenient access to either the front or the back of the unit. It included clear, concise cable management for superior cable routing, organization, accessibility and protection. Plus, the cabinet accommodated plug-and-play splitter modularity to enable fast, easy service activation well into the future.

During every phase—from initial discussions to detailed testing and test-runs, to ongoing technical support and on-time delivery, and on-site turn up collaboration—GCI received world-class support from ADC. In fact, ADC continued to monitor temperatures and product performance long after field deployment to ensure optimal consistency from the product, and satisfaction from GCI.



Benefits Realized by the Customer

Since GCI deployed the ADC solution, there hasn't been a single service interruption caused by cold weather. No circuits have failed and optical levels have been maintained. As a result, the company considers the project a major success and will soon replicate the deployment at additional sites in Anchorage and Fairbanks.

"The ADC cabinets were up and running in a week in Anchorage," said Donald Smith, Project Manager for GCI, "so we were able to turn up a business park with 17 buildings in a very short time—surpassing our expectations."

To date, five OmniReach FDH 3000 cabinets have been installed in Anchorage, along with two additional cabinets in Fairbanks. Because each cabinet is designed with preterminated fiber panels with a cable stub, as well as plug-and-play splitters, cabinet installation was finished within GCI's time frame for test and turn-up. As more companies in the districts heard positive reviews from neighboring businesses about the new, high-quality service, they immediately began requesting service activation as well. As a result, GCI has been able to quickly broaden its customer base and deliver key revenue-generating services to additional buildings and companies in the area.

As GCI converts customers from twisted pair copper to fiber networks and identifies other strategic business locations to maximize the potential of its fiber backbone, it will continue to capitalize on the demand businesses have for GPON. What's more, the company is confident that with the ADC solution it will be able to provide the residential sector with the same high-quality, revenue-generating services when the time comes to consider beginning deployment in that segment of the business.



ADC's OmniReach® Outdoor FDH 3000 cabinet withstands extreme temperatures and significantly reduces operating costs.

CASE STUDY



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

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