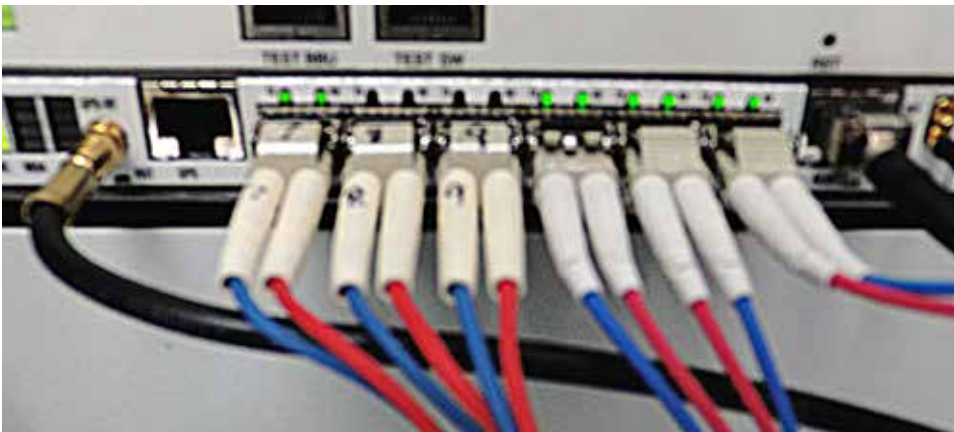


Sprint Case Study

3M Rises to the Challenge— No Crane Necessary



Backup Battery Unit (BBU) with link lights out prior to fiber restoration

The Challenge

For weeks, the brutal winter weather of January 2015 chilled everyone to the bone. So when cell service suddenly disappeared for more than 300 Sprint customers in Little Falls, New Jersey on January 25, 2015, some said it was the cold. And who could blame them. The temperature had averaged below freezing for the past month. But such was not the case. In fact, the culprit was a vandal—a cold-hearted one at that.

When Sprint's managed services provider investigated the signal loss, it was discovered that someone had purposefully broken into the junction box at the base of the cell site and used pliers to crimp and break 19 fiber connections in an effort to disrupt Sprint cell service. The associated fiber cables ran all the way up to the radio heads as part of three hybrid power/fiber cables, which sat atop a 100-foot chimney tower. The vandal was successful. Sprint's signal in the area was degraded or nonexistent. Sprint customers in the area—and those traveling through—had limited or nonexistent cell service.

The forecast was not good. Replacing the damaged hybrid cables with new ones would cost an estimated \$25,000* and would take days to deliver, if not weeks. A crane would be needed to reach the top of the tower. And a crew would have to do the work in the bitter cold.

* labor, equipment and materials included.

Overview

Organization
Sprint

Situation

Sprint experienced a severe service disruption at one of their cellular sites in Little Falls, New Jersey, due to vandalism in the fiber optic network connecting the cellular radios to their baseband controller. The carrier needed a fast, easy-to-use and cost-effective solution to restore service.

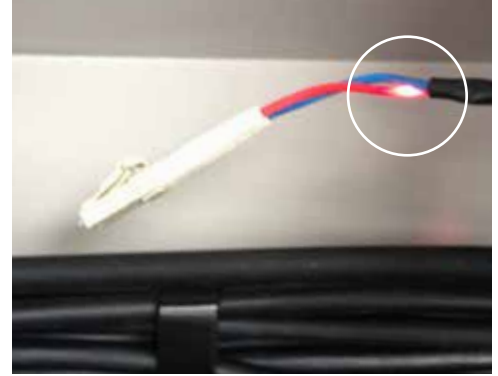
3M Solution
3M™ No Polish Connectors

Results

Using 3M™ No Polish Connectors and simple fiber prep tools, including the 3M™ Easy Cleaver, a cell site field engineer, assisted by a 3M sales representative, completed the fiber restoration and restored service within a few hours.

The Solution

The 3M Communication Markets Division came up with a solution to use 3M™ No Polish Connectors for the repair. It would be safer, quicker, easier and less expensive to fix the problem at the base of the tower, right in the junction box, where the damage occurred. No crane necessary for installing a whole new cable. By replacing the broken connections on the existing cables with field-terminated 3M No Polish Connectors, the cables could be reconnected to the network and service restored in a few hours.



Damaged fiber with visible light leakage at crimp point



Fiber prepped and ready for mechanical splice actuation



Aramid strength member captured by connector boot strain relief mechanism



Repaired fibers terminated with 3M™ No Polish Connectors

“I received the tools the day before, and after watching the videos on the 3M website, I attempted to implement the fix on a damaged fiber as a test run. Within minutes I had made my first repair with the 3M No Polish Connectors,” said Antonio Avallone, Ericsson Field Engineer.

The 3M No Polish Connector enables fast, field installation of 250 μm , 900 μm , and jacketed singlemode and multimode connections with its one-piece, pre-assembled design.

This high-performance connector is LC-compatible and features a built-in, factory-polished ferrule assembly and a mechanical splice 3M is known for and has installed hundreds of thousands of times all over the globe. It can be quickly and easily installed with common fiber prep tools and the 3M™ Easy Cleaver. This cleaver is disposable after 120 uses, unlike blade-style fiber cleavers that require a significant capital investment to equip installation and maintenance crews.

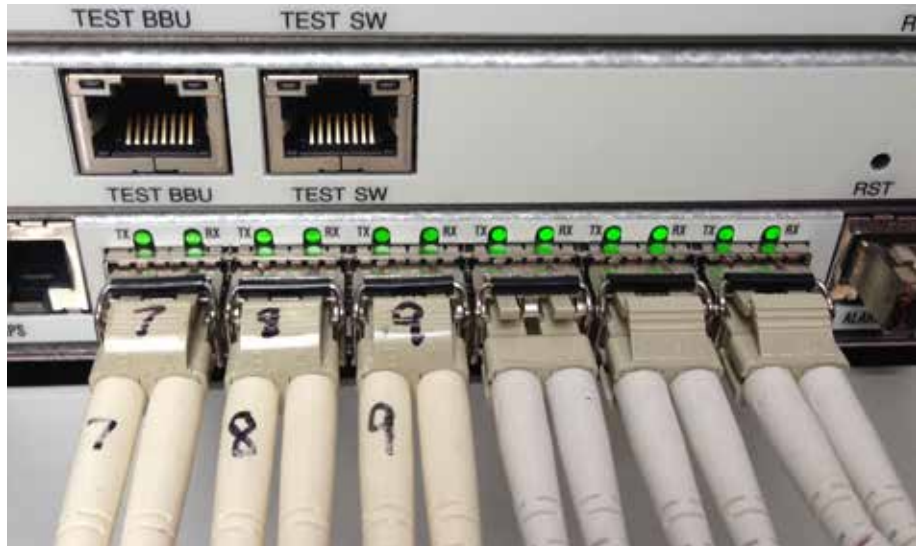
“We implemented the fix and tested all connectors in roughly 3 hours. Of course it would not have taken that long had the temperature not been in the upper 20’s” said Avallone.

All told, using 3M No Polish Connectors was a vastly easier, quicker and less costly solution.

The Results

Working with 3M, Sprint quality managers implemented the right solution with 3M™ No Polish Connectors and 3M™ Easy Cleaver.

“A random act of vandalism turned into a perfect opportunity for us to try the 3M Connectors. In minutes, a quick and simple fix repaired what otherwise would have taken a crew of laborers a day or two and around \$25,000,” said Leland Garris, Sprint Network Quality Assurance.



Backup Battery Unit (BBU) with link lights restored after fiber repair

There was no need to order expensive, custom fiber cable assemblies, a crane, or construction crews to make the repair. In addition to the significant cost savings, Sprint helped its customers in the area regain cell service in a few days, rather than several weeks.



Repaired fibers in junction box enabling optical link restoration



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