

## Single Fiber Conversion and Starcom/ River Valley Telephone Coop

**Starcom: Single-strand fiber LAN extenders greatly increase transmission distance.**

In the mid 1880s, local farmers in a small Iowa town installed their own telephone system to connect a handful of neighbors. At that time, the "outside plant" consisted of barbed wire strung directly on the farm fence posts along the route.

Today, more than 100 years later, Starcom—a division of River Valley Telephone Coop in Graettinger, IA—provides thousands of customers cable TV, cellular, long distance and Internet service via wireless and DSL technologies. What a difference a century makes.

Originally offering dial-up Internet access nearly a decade ago, a wireless link and a migration to fiber has enabled Starcom to extend their services and offer speeds of 256k and beyond. "Our wireless backbone link was only supposed to be for a short period, but our fiber installation took longer than anticipated," said Brian Girres Plant Manager for Starcom. "We couldn't wait to get our fiber in place."

Starcom ran fiber from their office to a tower which acts as a base point for their wireless Internet access point. It's a point-to-multi-point application which serves the community in a 40-mile radius of Faremont, MN. Customers utilize wireless-compatible equipment to receive their signal.

Though it was a new fiber installation so fiber wasn't in short supply, Starcom wanted to maximize its fiber investment

by implementing IMC Networks' single-strand fiber media converters. These converters allowed Starcom to connect the copped-based switches on either side of the fiber run while only lighting up one strand of fiber.

Single-strand fiber converters are perfect for various networking applications to double the capacity of the single-mode fiber optic cable. *iMcV-LIM TX/SSFx* performs a 100 Mbps copper to fiber conversion and allows two individual channels to share one strand of fiber — Full-Duplex data travels on different wavelengths (1310 nm and 1550 nm).

With Starcom lighting up only one strand of fiber for this installation, they can use the spare fiber strand for additional data traffic or to connect more subscribers at a later date. "We use the optical link for data, with VoIP possibly in the future," said Girres.

***"We looked at other single-strand fiber alternatives but the cost was twice as much and management wasn't included."***

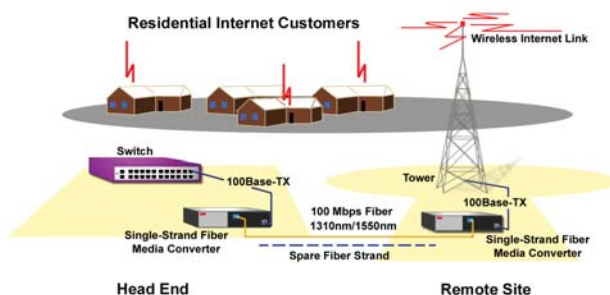
Starcom had looked at other alternatives because the distance they required exceeded that of the maximum quoted



distance of *iMcV-LIM TX/SSFx-SingleMode/PLUS* which is 40 km. "When we heard about IMC Networks' single-strand fiber converter from a Graybar rep, we thought we'd try it," said Girres. "We looked at other single-strand fiber alternatives but the cost was twice as much and management wasn't included."

Achieving the required distance was essential for Starcom. "Even with the distance requirement we had and after throwing in all the fiber coils, it's working real well for us," said Girres of *iMcV-LIM TX/SSFx-SingleMode/PLUS* converters. "We're running almost 37 miles." The 37 miles is roughly equivalent to 60 km, nearly 20 km greater than the spec.

As a result of its successful deployment, Starcom may use the *iMcV-LIM TX/SSFx* in another one of its exchanges. "We have a similar situation; the distance is much less but we only have one fiber to use. *iMcV-LIM TX/SSFx* could be the perfect solution." ■



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