



Case Summary

Customer

- Rapid Systems

Industry

- Telecommunications

Region

- USA

Challenge

- Multi-Gigabit capacity delivery at distances exceeding 8 miles using E-Band.

Solution

- UltraLink™-GX80 (E-Band PTP system)

Breaking the distance barriers for E-Band

Rapid Systems combined its microwave infrastructure with Intracom Telecom's innovative UltraLink™-GX80 radios to achieve an impressive 9 Gbit/s capacity at ranges over 8 miles!

The Customer

Rapid Systems, founded in 1996, is a full service Internet and Information Technology company providing fixed wireless to 11 counties in Florida. The company specializes in rural communities and permanent as well as temporary broadband solutions. Rapid Systems engineering designs, builds and manages infrastructure services for public and private entities. Its broadband solutions are customized for a variety of industries from mining to healthcare incorporating the latest technologies including automation and AI.

The Challenge

The company uses licensed microwave links at 11 GHz to interconnect their network towers, with a capacity of around 1 Gbit/s per link. Those links, however, needed to be upgraded to up to 10 Gbit/s in order to support the company's expansion plans. In absence of additional licensed spectrum, Rapid Systems considered E-Band as the proper solution, due to its lightly-licensed nature. The challenge though was the distance between the company towers that in some cases exceeded 7 miles. Synchronization at such hop lengths and target capacities, proved to be a severe obstacle for E-Band radios, especially at the rainy state of Florida. Any other alternative to E-Band would increase the deployment cost significantly, making the solution of the problem infeasible.

The Solution

UltraLink™-GX80 radios were installed in parallel to the existing 11 GHz licensed microwave links so that the microwave infrastructure, including its antennas, remained intact. UltraLink™-GX80 links, which were used as the primary capacity transport medium, have managed to successfully deliver multi-Gigabit service at a distance of over 8 miles with stable synchronization during clear-sky conditions and at 9 Gbit/s capacity, exactly as predicted in the RF plan study. This extraordinary achievement was furthermore complemented by the UltraLink™-GX80's failover license package. Failover is designed to switch priority traffic during adverse

“It is an absolutely huge deal to have massive amounts of reliable bandwidth at locations to provide gigabit bandwidth in rural markets. The Ultralink™-GX80 millimeter wave radio can offer up to 20 Gbit/s full-duplex capacity over a single antenna in 2+0 XPIC configuration, which can be very useful and cost effective in rural deployments where optical fiber is not available or too slow/expensive to deploy.”

Dustin Jurman
CEO/CTO, Rapid Systems

weather conditions from the E-Band path to any interconnected microwave link, and back to multi-Gigabit E-Band upon good weather restoration. As a result, Rapid Systems effectively upgraded their existing 11 GHz links to up to 10 Gbit/s capacities using the innovative E-Band technology of UltraLink™-GX80 radios.

The main reason of success is UltraLink™-GX80's market-leading system gain that exceeds 70 dB at 10 Gbit/s. Such high levels of system gain enable the synchronization of the E-Band links beyond 8 miles in rainy regions and maintain stability of the delivered multi-Gigabit capacities.

UltraLink™-GX80 is a high-performance, high-capacity E-Band (71-76 / 81-86 GHz) radio designed for use in demanding transport applications requiring capacity up to 20 Gbit/s (in XPIC configuration) as an alternative to optical fiber. It is a uniquely versatile fully-outdoor radio suitable for a wide variety of applications. It supports Ethernet/IP, eCPRI or CPRI traffic transport, while offering a rich set of standards-based L2 and L3 networking features for the delivery of Carrier Ethernet and IP/MPLS-based services.

Intracom Telecom's UltraLink™-GX80 radio, already widely deployed in MNO and WISP networks worldwide, is at the forefront of performance in terms of link range, spectral efficiency and operational flexibility. It can even be combined with third-party vendor radios, licensed or unlicensed, to enable capacity enhancement of existing MW links in a more effective and economical way, compared to adding one or more MW links. Furthermore, Intracom Telecom can offer a dual-band antenna capable of supporting both third-party vendor MW radios, as well as the UltraLink™-GX80, greatly facilitating the deployment of such a dual-band solution.

About Intracom Telecom

Intracom Telecom is a global telecommunication systems and solutions vendor operating for over 40 years in the market. The company has become the benchmark in fixed wireless access and it successfully innovates in the 5G/4G wireless RAN transport and small-cell SON backhaul international arena. Intracom Telecom offers a comprehensive revenue-generating software solutions portfolio and a complete range of ICT services, focusing on IoT, SDN/NFV, Big Data analytics & data-driven intelligence, and Smart City solutions. Moreover, it addresses the Energy & Utilities industry, emphasizing on smart metering and end-to-end IT solutions. Intracom Telecom is also active in the defense systems sector providing security integrated systems for critical infrastructure protection and border surveillance. The company has extensive know-how and a proven track record in the market, serving fixed and mobile telecom operators, public authorities and large public and private enterprises. Intracom Telecom maintains its own R&D and production facilities, and operates subsidiaries worldwide.

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