

Tropico Telephone Expands Network with Motorola PTP Wireless

La Ceiba, Honduras, Central America



TTI Headquarters in La Ceiba

Customer

Tropico Telephone & Internet (TTI / www.tti.hn) is a broadband Internet and licensed Honduran telephone company. Based in the Caribbean seacoast town of La Ceiba on Honduras's north shore, TTI provides broadband DSL and wireless Internet services, pure-VoIP telephone service and enterprise consulting services to its clients on the north coast and on the Bay Islands of Roatan, Utila and the Hog Islands (Cayos Cochinos).

Experiencing a growing demand for its voice and Internet services in a recently deregulated Honduran communications market, TTI recognized an opportunity to both expand its network and decrease its dependence on the ILEC network that carried TTI's communications across Honduras.

The Situation and Challenge

As one of several new licensed telephone companies competing in the more open market, TTI needed to boost capacity, improve quality and curtail data-circuit leasing from the ILEC, which would cut monthly fees and increase reliability. Essentially, TTI needed a major wireless network overhaul, connecting its network with the landing point for the Honduran undersea fiber nodes that touch the north coast in Puerto Cortes, nearly 69 miles (111 km) from TTI's current base. Connecting directly to this fiber would bypass the ILEC network and give TTI direct control over its entire in-country infrastructure.

Building a reliable network in an environment that is highly corrosive due to salt water and subject to the strong winds of seasonal hurricanes and tropical storms presented quite a challenge. Significant and frequent lightning strikes, unreliable utility power, and high heat and humidity also contributed to the difficulties. Compounding the environmental adversity was the distance between TTI's closest network node on Utila and Puerto Cortes on the coast, which required building the longest wireless data link in the country.

To meet its goals, TTI needed five point-to-point wireless links, connecting a total of six tower sites. Each link had to exhibit high reliability, be stable in harsh conditions and provide consistently high throughput.

Technical Requirements

- Five point-to-point links from 6 to 69 miles (10 to 111 km) in length
- Minimum of 20 Mbps symmetric (40 Mbps half-duplex) on each link, with the ability to increase speed over time
- Carrier-class reliability (99.999% availability)
- Low jitter for VoIP call quality
- Unlicensed frequencies for rapid deployment

"The build quality and performance of the PTP 400 and 600 Series radios are impressive. The link planning tools, the easy web-based management and software stability are unmatched by their competition. Yet what truly sold us on a Motorola solution was not just the great product, but the superb pre- and post-sales attention from the Motorola PTP Wireless Group, which exceeded our expectations in every respect in the sales and support process."

~ Andrew White, CTO, Tropico Telephone & Internet

Deployment Detail and Interoperability

TTI found that a combination of Motorola's Point-to-Point Wireless Ethernet Bridges – 400 and 600 Series units met the technical requirements. Connectorized radios with RadioWaves parabolic dish antennae were used to deploy the links with spatial diversity configuration.

Of greatest concern was the longest link, stretching 69 miles (111 km), mostly over the open ocean where thermal ducting and multipathing could disturb the signal. The inherent spatial diversity of the Motorola antennae solved multipathing problems for the over-water links, and the antenna gain provided additional fade margin to combat loss caused by thermal ducting.

Special attention was also given to grounding and lightning protection. Charge dissipators, power and data surge protectors, cable shielding, and the use of high-quality grounding materials were installed to minimize the chance of damage due to lightning or static discharge.

The Results

The combination of PTP 400 and 600 Series radios enabled TTI to achieve all its requirements, allowing an easy upgrade path for bandwidth growth while minimizing the up-front investment. Because of the direct connection from the network to the fiber landing points in Puerto Cortes, TTI enjoys end-to-end control of the most reliable data network to the north coast of Honduras and the Bay Islands. TTI calculates that the project will pay for itself in under a year just due to the cost-savings realized by eliminating payments to the ILEC for data transport.

Why Motorola?

- Motorola PTP 400 and 600 Series radios deliver a highly reliable, robust, long-distance connection, even over water
- High data throughput enables heavy-duty applications such as high-speed Internet services and VoIP
- On-board software and an audible signal make the radios easy to deploy
- Self-managing operation keeps the radios hassle-free

About Motorola

Motorola is known around the world for innovation and leadership in wireless and broadband communications. Inspired by our vision of Seamless Mobility, the people of Motorola are committed to helping you get and stay connected simply and seamlessly to the people, information, and entertainment that you want and need. We do this by designing and delivering "must have" products, "must do" experiences and powerful networks – along with a full complement of support services. A Fortune 100 company with global presence and impact, Motorola had sales of US \$36.8 billion in 2005. For more information about our point-to-point products and services, visit our website at www.motorola.com/ptp.



Utila tower:
3 PTP 600 Series links

At the time of this installation, the products deployed were the Orthogon Systems OS-Gemini and OS-Spectra point-to-point wireless Ethernet bridges. With Motorola's acquisition of Orthogon Systems, the OS-Gemini products were renamed as the PTP 400 Series bridges and the OS-Spectra products were renamed as the PTP 600 Series bridges. They are now part of Motorola's **MOTOwi4™** portfolio of innovative wireless broadband solutions that create, complement and complete IP networks. Delivering IP coverage to virtually all spaces, the **MOTOwi4** portfolio includes Fixed Broadband, WiMAX, Mesh and Broadband-over-Powerline solutions for private and public networks.

MOTOwi4™



For more information about the Motorola Point-to-Point Solutions:
Outside of North America: +44 1364 655500
In North America: +1 877 515-0400
www.motorola.com/ptp

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