

# ThePacific.net Reliably Backhauls Traffic Despite Extremely Adverse Weather Conditions

Takaka Hill, New Zealand



## Customer

ThePacific.net offers broadband Internet service to businesses, schools, farmers and residents at the Top of The South Island, New Zealand, a region of astounding natural beauty that includes enormous tracts of national park land. One of its landmarks, Takaka Hill, was chosen as a setting for "The Lord of the Rings" movie. With 20+ radio sites providing broadband access for voice, video and data communications, ThePacific.net is expanding rapidly, reaching customers in an environment that ranges from expanses of open land and water to forests and high mountain peaks.

## The Situation and Challenge

ThePacific.net is a broadband provider carrying a huge load of diverse communications. All links between its 40+ sites use wireless backhaul. Most recently, The Pacific.net needed to establish a new backhaul solution between two sites – Mt. Burnett and Takaka Hill – with 99.999% availability.

At 2,103 feet (641 meters), Mt. Burnett is the highest peak in the Wakamarama Range, and overlooks the town of Collingwood on Golden Bay. Its coastal location gives it the extremes of

weather – high winds, massive rainfall, snow and ice all winter, and heat in excess of 86° F (30° C) during the summer. Because of the winds, large antennas posed a concern. Mt. Burnett also offers little tower space.

Takaka Hill, rising to 3,117 feet (950 meters), lies approximately 29 miles (47 km) southeast of Mt. Burnett, with a fairly clear line-of-sight. Windswept and rugged, Takaka Hill also experiences weather extremes. A wireless radio link carries communications to and from the nearby township of Takaka.

Making the weather challenge even more problematic, the two sites, though not situated terribly far apart, can experience completely different weather conditions during the same time period.

## Technical Requirements

- Backhaul solution with 99.999% uptime and adequate bandwidth
- Rugged construction to operate in extremely adverse weather conditions
- Small radio/antenna footprint
- Easy installation and operation

*"Since our installation quite a few months ago, we haven't had any issues with the units at all, even through snow and ice, massive lightening storms and winds that flattened nearby forests."*

~ Justin Wells, Senior Engineer, ThePacific.net

### Deployment Detail and Interoperability

As a trial, one Motorola Point-to-Point Wireless Ethernet Bridge – 400 Series unit with a one-foot (one-third meter) integrated antenna was deployed on each peak to handle the 31-mile (50-km) link. Because of the small size of the Motorola unit, each radio was simply bolted on the tower at each site and roughly pointed. Final alignment was easily made using an audio signal and the system's integrated management software.

The performance of the Motorola PTP 400 Series units was benchmarked against two competitive brands. Prior to installing the PTP 400 Series solution, ThePacific.net had deployed a competing radio with a 4-foot (1.2-meter) 34dBi antenna. On the same terrain, the data rate achieved was only a quarter of what the PTP 400 Series unit achieved, and the range was much shorter. The other system studied in the comparison proved much less easy to install. Once the PTP 400 Series unit was tested, it immediately became the radio-of-choice.

### The Results

Following the trial, the competitive brands were removed, and the Motorola link between Mt. Burnett and Takaka Hill was left in place to operate independently. In its first few months of operation, the PTP 400 Series link has performed continuously and flawlessly through considerable weather challenges, providing continual uptime and averaging throughput of more than 12 Mbps.

### Why Motorola?

- The PTP 400 Series solution delivers a highly reliable, high-bandwidth connection, even in extreme weather conditions
- Small footprint and integrated antenna required little tower space
- The on-board software and audio signal made it easy to deploy
- Self-managing operation keeps it 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](http://www.motorola.com/ptp).



At the time of this installation, the products deployed were the Orthogon Systems OS-Gemini 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. 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](http://www.motorola.com/ptp)