

## South Park Telephone Triples Link Capacity with Castle Rock Microwave



*South Park Telephone Company (SPTC) serves over 600 square miles in central Colorado and provides a suite of communication services including Internet and local and long distance phone service. SPTC was established in 1996 by the MacCormack family as a means to provide telephone service to unserved areas in central Colorado. Due to the diverse terrain, sparsely populated area and lack of commercial power, SPTC deployed microwave wireless technology along with a solar power platform that enabled it to offer telephone service to South Park and the surrounding area.*

### **The Challenge**

SPTC's business challenge was capacity between two of its microwave sites. The existing radios supported only two channels for a total throughput of 230Mbps, but customer growth had led to a need for more throughput. One particular aspect of the challenge was that the link route was heavily congested, so adding new radios with higher channel capacity would require coordinating with other microwave users in the area. Castle Rock Microwave took on this challenge and quickly provided a solution.

SPTC has eight microwave sites using 11GHz radios. The goal was to add capacity to two sites situated 21 miles apart, located at Eagle's Nest and on Dick's Peak. The distance required SPTC to continue using 11GHz radios. Castle Rock Microwave had fulfilled various projects for SPTC in the past, and the company once again called on them to take on this challenge.

### **New Radios for Higher Capacity**

"We relied on Castle Rock Microwave to find a solution to our capacity problem and they delivered," said Shawn Davis, operations manager at SPTC. "We had an existing relationship with Castle Rock Microwave from previous engagements, and we felt confident in calling on them again for this project. They helped us secure the new channels, purchase new radios, install them and coordinate frequencies with other users in the area so we could maximize our capacity and there wasn't any interference."

The solution was to deploy new Aviat WTM 4200 11GHz radios, which delivered three channels instead of two. Moreover, those channels were 80MHz wide to deliver 750Mbps each, so the overall solution would deliver 2.25Gbps of throughput.

Buying new radios and installing them was a relatively simple part of the assignment. But it took several conference calls between Castle Rock Microwave, SPTC staff, and other microwave users in the area to coordinate frequencies to maximize throughput while avoiding interference.





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“The radio space was already congested with traffic from other carriers in the area,” said Davis. “Castle Rock Microwave coordinated with the other carriers to allow us to maximize our channels. We couldn’t have gotten the capacity out of the network without this coordination. We actually held conference calls where we adjusted our power levels on the fly so everyone could watch for interference.”

With site surveys, radio delivery and installation, and frequency coordination among the various stakeholders, the entire project took only two weeks.

## Results

The results were dramatic, said Jeremy Larson, senior network and engineering manager at SPTC. “We increased our output power by 10dB, which is a lot in the wireless world. It allowed us to bid additional services and increase our capacity to existing customers,” he said.

The network now has full redundancy with eight times more capacity than it previously had.

Throughout the project, Castle Rock Microwave was a responsive partner. “They were very easy to work with,” said Davis. “They were prompt, they communicated, and they had outstanding attention to detail, particularly in coordinating all of the setup and planning calls we had to do to work out the frequency interference issues with other parties.”

Over the years, Castle Rock Microwave has been a trusted microwave consulting and service partner for South Park Telephone Company. This project proves that the trust has been rewarded as SPTC considers additional network upgrades in the future.

