



Case Study

Antenna adjustment using spectrum analyzer

ARBUCKLE COMMUNICATIONS INC, USA



Ardmore, Oklahoma, USA

Introduction

A wireless internet service provider encountered difficulties with a 17 mile microwave link while performing a network upgrade. For several days their professional cellular crew couldn't identify the problem with conventional methods and tools costing the company more than \$1000 a day. However, when a Spectrum Compact was brought to the scene, it only took a few minutes to identify the problem and choose an appropriate solution.

Customer

Arbuckle Communications, based in Ardmore, Oklahoma, was founded in 1931. The Company is a wireless Internet service provider (WISP) with approx. 50 mile wireless network spread throughout the city. Arbuckle offers high-speed wireless Internet and digital phone services for businesses and households.

Challenge

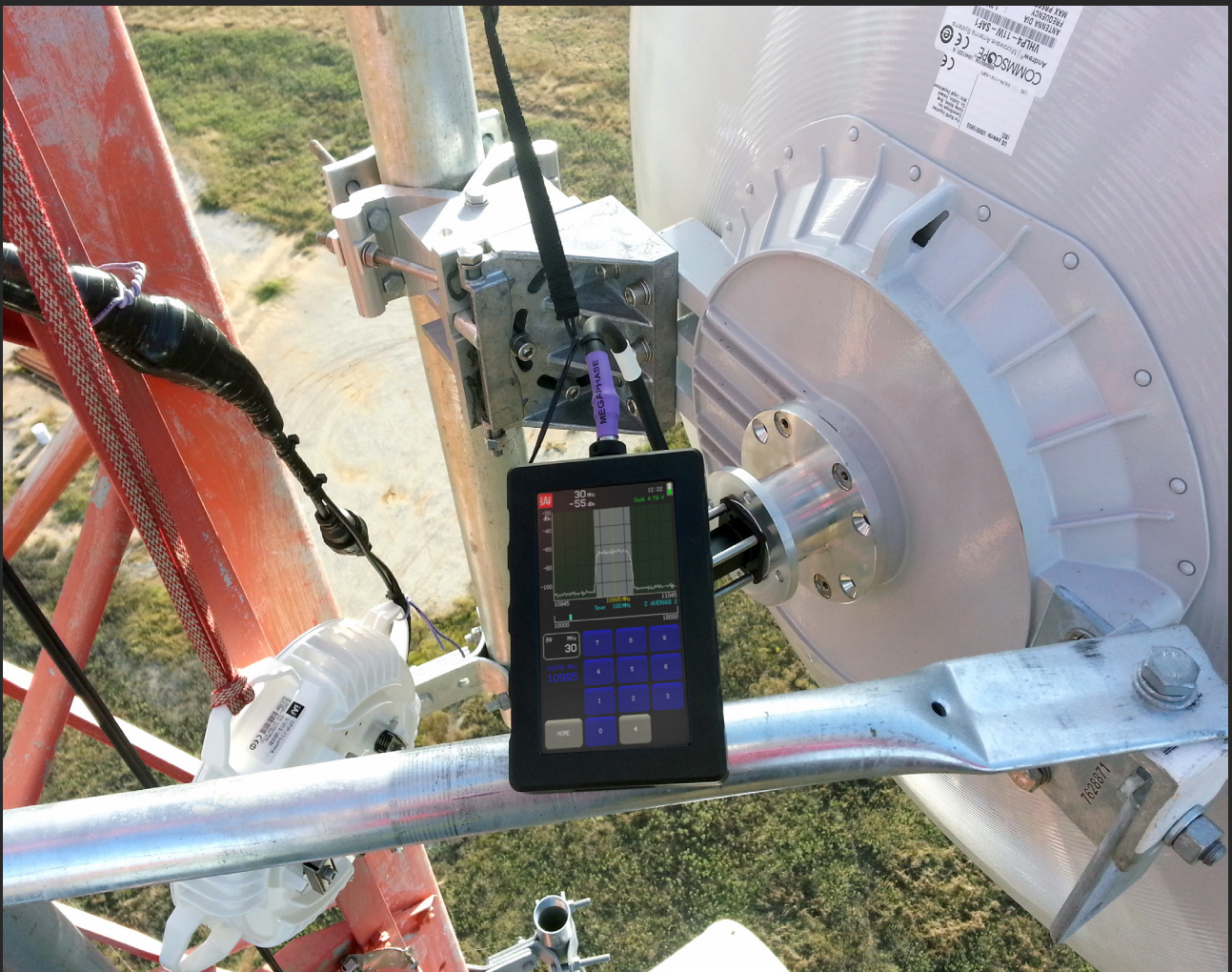
Five new microwave links were installed during the network upgrade. The installation crew detected a problem with an 11GHz 17 mile link with 4ft antennas where the radio signal was 30dB off from the target level. Conventional radio alignment tools and methods failed to explain the insufficient signal level threatening to significantly delay the commissioning of the network and increasing the company's expenses.

Solution

After several unsuccessful diagnostics attempts the customer was offered to troubleshoot the link with a SAF Spectrum Compact. The cause of the problem was detected in less than 10 minutes. The engineer on the ground simply attached a waveguide flange to the SC unit and pointed it in the direction (along the path) of the transmitting radio. Spectrum Compact

"We didn't realize it was possible to align the antenna to the minor lobe from such a long distance. We were basically shooting blind until we pointed waveguide in the direction of other radio and detected the problem in just about 30 seconds. It's unbelievable to have such functionality in a cell-phone sized device."

Don Clowdus, CEO of Arbuckle Communications



With Spectrum Compact it was possible to detect that the antenna was aligned to the minor lobe of transmitting radio within just 10 minutes.

indicated that the transmitting radio was aligned to a side-lobe of the receiving antenna. The customer, impressed with the ease of use and efficiency of the device, ended up ordering two Spectrum Compact kits and 3 waveguides for future installation and troubleshooting of 6, 11, 18 and 24GHz links.

Spectrum Compact advantages

- Vendor neutral
- Immediate return on investment from an additional tower climb
- Potential to detect interference from existing Tier 1 carrier installations
- Ability to check the performance of radios before installation
- Option to save the link performance logs for further analysis and reference

"We were so impressed with the loaned device that we bought our own spectrum analyzer. It will pay for itself with the time saved on installing and servicing microwave equipment."

Don Clowdus, CEO of Arbuckle Communications

