

# CASE STUDY

with *WiFires Communications*

Baicells

## How Quality, Cost, and Performance of Baicells Products Helped WiFires Communications Grow



### Overview

Almost every aspect of life today is tied to the digital world. High-speed Internet is embedded in education, commerce, healthcare, entertainment, and employment, making it a necessity, not a luxury. Yet, millions still lack access to high-speed broadband services, especially in rural areas. Factors such as geographical location, cost, and lack of infrastructure contribute to the digital divide (disproportionate access to information and communication technologies).

The adage “Everything is Bigger in Texas” likely originated as a reference to the state’s geographical enormity. Texas is second only to Alaska in size and contains six of the fastest-growing cities in America. However, the number of Texans without a broadband internet connection is as enormous as the state’s size. Four of the five least-connected cities in the country are in Texas, with an estimated nine million people lacking reliable, high-speed internet connection.



## Overview - Continued

Paris, Texas, in Lamar County, lies in the northeast corner of the state. The town is on the western edge of the Piney Woods, a coniferous forest covering 54,440 square miles of East Texas, southern Arkansas, western Louisiana, and southeastern Oklahoma. Due to the densely wooded areas, many residents live without a reliable, high-speed Internet connection.

Dedicated to serving metropolitan and rural communities in northeast Texas with reliable, high-speed Internet, WiFires Communications calls Paris home. Familiar with the geographical challenges in their service area, they invested in the Baicells' product line. The Long Term Evolution (LTE) technology of the Baicells products effectively enabled them to deliver a fixed-wireless solution to underserved communities and helped grow their customer base.



---

# The Problem

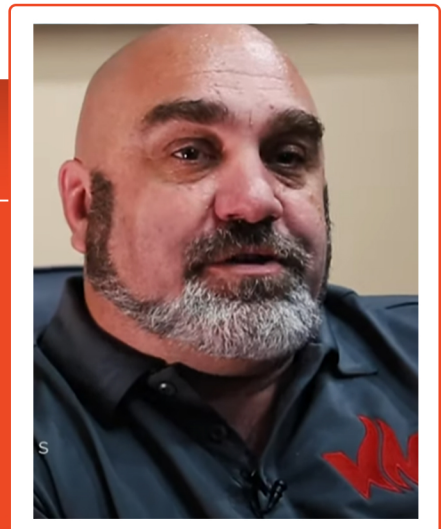
---

Fiber-optic Internet is a fast and dependable broadband solution, offering light-speed data transmission over longer distances. This wired connection begins at an Internet backbone, a conglomeration of multiple, redundant networks owned by numerous companies. The backbone, or trunk line, consists of many fiber-optic cables bundled together to increase data capacity. A fiber-optic cable is connected from the backbone to a home or business, allowing data to travel quickly back and forth. However, fiber-optic requires cabling to every home, which becomes costly in rural areas needing longer cable lines. As a result, internet service providers neglect these areas or raise customer costs, leaving farming communities and regions with a low population density without access to high-speed Internet.

Satellite, Digital Subscriber Lines (DSL), and fixed-wireless solutions are common alternatives to fiber-optics, but each poses unique challenges. Satellite is generally not a preferred option due to latency, and DSL speeds fade with distance. Fixed-wireless runs fiber from an access point installed on a nearby structure to a home or business—a direct, higher-frequency microwave signal sent directly to the receiver results in faster Internet speeds. However, obstacles such as buildings, mountains, and trees may absorb or reflect signals, limiting the signal's strength and transmission ability. The path of propagation of a Radio Frequency (RF) obscured by obstacles is referred to as Non-Line-of-Sight (NLOS). Residents living in densely wooded areas are often negatively impacted by NLOS environments, resulting in slow, if any, internet connection.

## **Mossie Kines, the owner of WiFires Communications, elaborates:**

“Our challenge here in northeast Texas, in Lamar County, is that we have a lot of densely wooded areas, leaving homes starving for the Internet. Most homes can't function without the Internet today. We take care of those forgotten people. It's like giving water to somebody in the desert. It's what they want. It's what they need.”



---

# The Solution

## Nova227 eNodeB

---

Long Term Evolution (LTE) is designed for outdoor wireless and operates exceptionally well in high foliage environments with proven NLOS penetration and coverage. LTE can connect new customers thought unreachable and provide higher capacity and more reliable service to existing customers. The Baicells' Nova227 eNodeB (eNB) with LTE technology made it possible for WiFires to improve speed for its existing network and reach new customers living in NLOS environments.



“The LTE product allowed us to deploy in neighborhoods with dense woods and trees. We use the 227s as a microPoP and keep them low to the ground, relieving the stress on our primary towers and eliminating extra noise for them. The Nova227 has worked great for us because we were able to expand our network without adding cost,” reports Kines.

The Nova227 eNB is a high-performance, outdoor micro base station with a built-in antenna. It is compact and lightweight, ideal for reaching tightly clustered pockets of customers and those living in coverage holes or at the network edge. As with all Baicells products, the Nova227 supports LTE technology, and it operates in Time Division Duplexing (TDD) mode. With an incredibly low-cost-of-entry and equipped with Baicells plug-and-play technology, the Nova227 provides operators a near-immediate return on their investment.

“I understand WiFires is a young company, but we’re a young company that grew very fast due to good products. I wrote a letter about Baicells and posted it on social media because my employees wanted me to talk about this product. It makes their job so easy. I would recommend Baicells to any operator, and that’s the reason I’m talking about it today. If I didn’t recommend it, I would be doing others a disservice.”

**For more information about the Atom OD06 CPE and other Baicells products, visit [baicells.com](http://baicells.com).**

