

Client: airBand Communications
Project: Network Overview White Paper

Unleashing the Benefits of Broadband

Fixed Wireless Network Brings Scalable Solutions to Any Size Company

Information drives business. Whether delivered by phone, fax, email or Web, having information faster than the competition can mean the difference between success and failure. But until recently, the playing field has been anything but level. Big companies have continually outpaced their smaller competitors through the use of high-bandwidth, productivity-boosting applications only they could afford. Meanwhile, small and medium-sized businesses have been restrained by the inefficiencies and prohibitive costs of traditional telecom networks.

Enter fixed wireless broadband. Like an airplane flying over a crowded freeway, fixed wireless circumvents the traffic jams of hard-wired networks to beam high-speed voice, data, and Internet services to customers with remarkable simplicity and near-flawless reliability. Perhaps more importantly, the scalable nature of fixed wireless bandwidth unlocks the door to broadband solutions that once were available only to the largest companies.

Put simply, fixed wireless makes broadband better for business, and nobody does fixed wireless better than airBand.

How it Works

Fixed wireless is not WiFi, the wireless technology used to create Internet "hot spots" in homes and coffee shops. Rather, airBand's fixed wireless is a powerful, business-class service that can meet the bandwidth requirements of companies large and small.

airBand delivers broadband services through its wholly owned network, bypassing the major local telephone company altogether. airBand broadcasts and receives data traffic from a series of radio antennae, typically placed atop tall buildings to ensure maximum range. The signal is received by another antenna at the subscriber's building through either a point-to-multipoint or point-to-point connection:

- **Point-to-Multipoint:** Most airBand customers receive service through this method, by which a base station connected the core network serves multiple subscribers in the coverage area.
- **Point-to-Point:** For customers who require higher bandwidth, point-to-point offers dedicated, scalable connections.

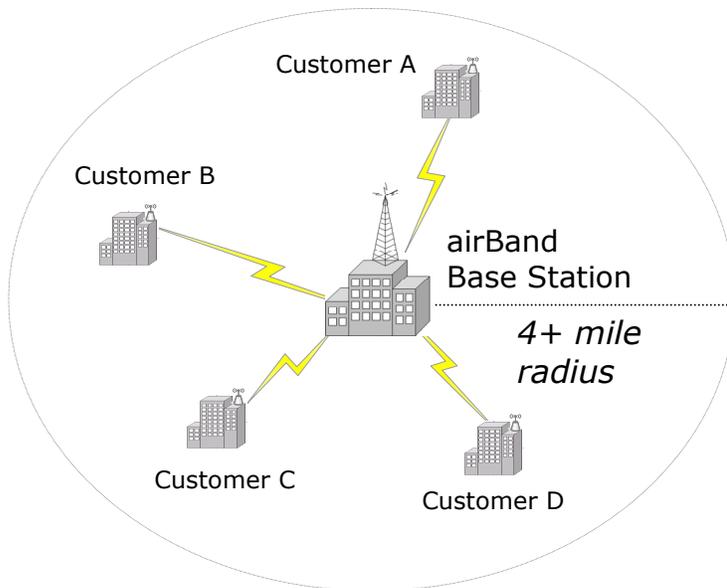


Why WiMAX?

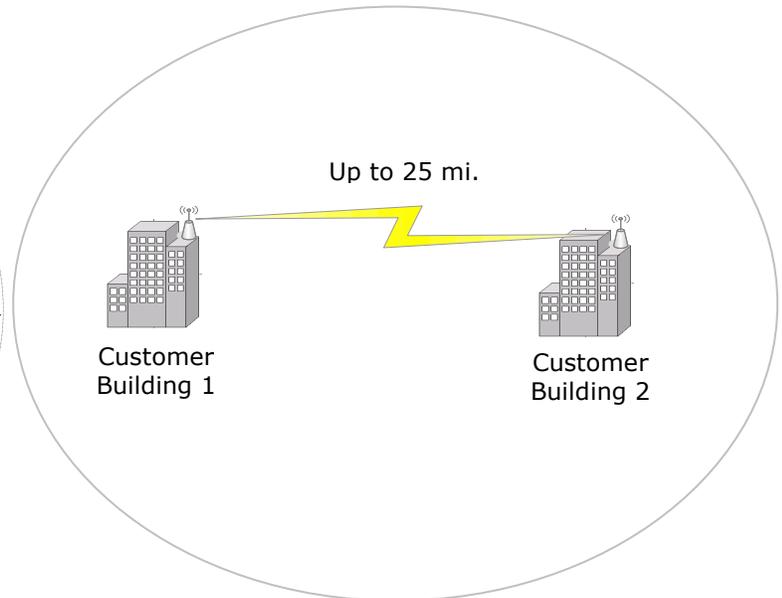
airBand's wireless networking equipment is the key to its competitive advantage, which is why the company is an active member of the WiMAX Forum. The WiMAX Forum is an industry-led organization that calls for the standardization and interoperability of broadband wireless products.

Companies who employ WiMAX certified equipment have the flexibility to make hardware changes or upgrades with relative ease, bringing the best possible service to customers while keeping costs low. By comparison, providers without WiMAX equipment may find themselves stuck with outdated technology and unable to make upgrades without a staggeringly expensive network overhaul, passing along poor service and higher costs to end-users.

Point-To-Multipoint



Point-To-Point



Regardless of their connection type, customers can count on the proven performance and reliability of airBand's wireless *and* wired networking equipment. airBand employs WiMAX certified antennae and other wireless gear (see more on WiMAX in accompanying sidebar), while its network core and wired customer premise devices come from industry stalwart Cisco Systems.

Why it's Better

The airBand advantage comes from the simplicity of its fixed wireless network. While traditional networks are mired in mix-and-match technologies pieced together over decades, airBand designed and built its network from the ground up for the sole purpose of delivering fast and flexible broadband solutions to businesses. Fixed wireless offers a number of compelling advantages over traditional copper or fiber connections:

- *Rapid installation:* Whereas wired service providers take weeks, even months, to provision a connection for a new customer, airBand can have new fixed wireless customers up and running in just a few days.
- *Scalable bandwidth:* When airBand fixed wireless customers need more Internet speed, it's as easy as "turning up the dial," and airBand can make it happen in a matter of minutes. Such bandwidth elasticity is perfect for growing companies who need to ramp up their service over time, or even to handle short-term spikes for business continuity and disaster recovery projects.
- *More reliability:* In the wired world, too many moving parts make for more frequent breakdowns and slower resolutions. Even relying on a second copper or fiber connection doesn't guarantee protection from cable cuts and other outages that can take days to repair. airBand's fixed wireless network offers a true diverse path, unaffected by the vulnerabilities of traditional networks. What's

more, airBand utilizes Dual Path Service Delivery (DPSD) technology, creating an automatic “failover” of wireless signals that virtually eliminates all downtime. In the event of a power outage, uninterruptible power supplies (UPS) and generators placed at customer facilities keep users connected.

- *Efficient maintenance:* Thanks to its wholly-owned network, airBand is able to make repairs quickly if service issues do arise, since there’s no need to navigate the red tape of the major local phone company.
- *Easy relocations:* When customers move buildings, there are no complicated arrangements required to migrate broadband solutions. An airBand subscriber unit (the customer’s antenna) can be moved and reinstalled with far less hassle than a wireline connection.

Through constant availability, simplicity of use, and increased productivity, airBand customers find that fixed wireless broadband brings value to their bottom lines.

Safe and Secure

Not only is fixed wireless a more efficient path to high-speed broadband, it’s every bit as secure as traditional telecom networks. In fact, airBand signals may have even less risk of being intercepted.

First, airBand uses wireless equipment that is not configured for open access, meaning only airBand and the equipment manufacturer know the details about the method of data transmission and encryption. This differs from more open-sourced equipment used in Wi-Fi applications, which can be pirated by unauthorized users within signal range.

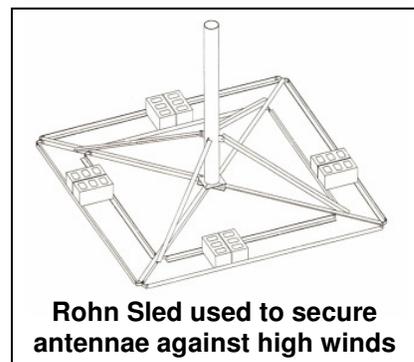
Additionally, data is transmitted to and from airBand customers using the same secure switching technologies employed by most wired networks, such as ATM or MPLS. Finally, airBand overlays an extra layer of security utilizing the Advanced Encryption Standard.

Come Rain or Shine

For airBand customers, the skies are always clear. The miniscule effects of rain, fog and snow on fixed wireless service delivery are imperceptible to end users. Using statistical weather data from the International Telecommunication Union, radio engineers are able to make minor signal adjustments to continue uninterrupted service during even the fiercest storms.

In times of severe rain, wireless transmissions have an advantage over wireline networks, since downed lines in flooded areas can take days or weeks to repair.

Rooftop antennae must also contend with wind, which is why airBand’s equipment can be installed to withstand gusts of up to 120 mph in wind-prone areas. Even through the devastating hurricane seasons of recent years, airBand’s coastal customers have remained online.



Rohn Sled used to secure antennae against high winds

Finally, airBand provides additional protection against lightning strikes, including grounding and suppression methods that limit the effects of lighting on the equipment.

No Fear of Interference

Beyond weather-related safeguards, airBand goes to great lengths to minimize signal interference and ensure nonstop service to customers.

airBand engineers install every subscriber unit with precise adjustments to ensure the optimal line-of-sight and minimal interference from adjacent structures. Where the technicians leave off, the equipment takes over. airBand's wireless gear utilizes the most advanced radio technology available, including Forward Error Correction (FEC), which allows the wireless base station to transmit redundant data to minimize errors on the receiving end; and Orthogonal Frequency Division Multiplexing (OFDM), by which the customer's antenna continually searches for and automatically adjusts to the strongest signal available.

Always Up, Always On

airBand's secure technologies, redundant signals, and resilient equipment are proactively monitored 24x7 at airBand's state-of-the-art network operations center. Some may call it overkill. airBand calls it the 100% uptime guarantee.

Whether they choose airBand for the fast installation, flexible bandwidth, or unflinching reliability, there's one thing IT managers and business owners can agree on: fixed wireless is raising the bar for business communications services.

For more information please visit www.airBand.com or contact us at 866-AIRBAND.