

QXNet T1 Replacement with Licensed 3.65 GHz

RedMAX Solves Latency, Interference Issues Instantly



The Challenge:

QXNet provides Internet service to Lexington, KY, a sprawling city surrounded by rural territory, 80 miles from the next metro area. Initially a dial up service provider in 1997, QXNet grew with the times to replace its T1 network with wireless technology as quality of service demands became more complex. Interference, compliments of the area's turbulent weather patterns, resulted in repeated outages and ensuing service calls. Ten years into advancing their usage of local 5.4 GHz and 5.8 GHz bands, interference and frequency constraints demanded they upgrade the network.

Solution:

With the allocation of the 3.65 GHz light-licensed frequency for broadband deployments, QXNet evaluated a short list of WiMAX vendors. Both the band and the technology were new to Service Providers in the United States. QXNet was poised to benefit from the precious commodity of more spectrum provided by the 3.65 GHz band, IN addition, WiMAX technologies promised greater quality of service (QoS) than they could currently provide. After a comprehensive review, QXNet found that Redline's RedMAX product had the best capacity and lowest latency on the market.

Result:

Using a combination of twelve 3.65 GHz RedMAX base stations and premium access in 5.4 GHz with 50 units of Redline's RedCONNEX AN-80i, QXNet effectively replaced its entire T1 service network. The seamless handover from one network to another was hardly noticeable, but to the QXNet service department one thing was quite noticeable: a lack of service calls. The resistance to interference and the spectral efficiency that WiMAX provides generated immediate an ROI in terms of happy customers, which led to more customer referrals. The average rate per user (ARPU) increased dramatically because there was more bandwidth available and more service to sell.

Quality of Service in 3.65 GHz Equals Happy Customers with RedMAX

QXNet President Jonathan Barker says despite all the things that a service provider counts under quality of service, his customers determine QoS by one quality alone: latency. The time delay between initiation of the wireless signal and the delivery of information is the single most important concern for wireless customers. Right behind latency is reliability. In fact, Barker has found that the mere mention of wireless technology in a discussion about Internet service ignites fear in some customers. Competitors will feed that fear with all kinds of stories about service downtime and outages.

Coincidentally, the service outages that had become customary on the former network are history. In an area with the full spectrum of weather scenarios – from dry and hot to freezing ice to thunder and rain – the number of service issues and dead subscriber units were counted daily. Under the 3.65 GHz RedMAX network, nobody is watching the weather. Originally, they converted to WiMAX for the immediate frequency expansion, but QXNet customers have seen dramatic improvement in reliability and latency as well.

How the Solution Works

QXNet replaced its legacy 5.4/5.8 GHz network with a lightly- licensed 3.65 GHz WiMAX network using twelve of Redline's RedMAX base stations as the network's backbone and 50+ of Redline's 5.4 GHz RedCONNEX AN-80i units for premium access and voice applications with connections up to 48 mbps.

The AN-80i also enables QXNet to replace several point-to-point bridges with RedACCESS point to multipoint units to deliver service that runs 45 mbps in a 20 MHz channel. The previous technology was reliable, but enabled only 10 mbps of throughput in a 10 MHz channel. The performance increase affected a tangible and immediate increase in ARPU simply by the number of phones they were able to add to the network.

Once the wireless network was established, turnover from one network to the other took about two minutes, according to Barker, who testified that speeds and guaranteed uptime across this network will far exceed conventional landline technology.



Strategic & Operational Benefits

- Increased spectrum availability in the 3.65 GHz band
- Greater spectrum efficiency in a 7 MHz channel
- Reliability of service in an area prone to interference
- FCC light-licensed regulations enable rapid deployment
- Immediate ARPU increase and ROI
- Seamless handover with little or no loss of coverage

"We used to brace for every storm. Our older network would give us serious issues in major weather. Now in a storm, no one seems to notice any change in their service, therefore our service department can focus on deploying higher capacity networks and more gear to serve more customers."

– Jonathan Barker, QXNet President

About Redline Communications

Redline Communications is the leading provider of fixed and mobile standards-based wireless broadband solutions. Redline's RedMAX™ WiMAX Forum Certified™ system, RedMAX 4C Mobile WiMAX™ products, and its award-winning broadband wireless infrastructure family of products – RedCONNEX™ and RedACCESS™ – enable service providers and other network operators to cost-effectively deliver high-bandwidth services, including voice, video and data communications. Redline is committed to maintaining its wireless industry leadership with the continued development of WiMAX and other advanced wireless broadband products. With more than 75,000 installations in 80 countries, and a global network of over 140 partners, Redline's experience and expertise helps service providers, enterprises and government organizations roll out wireless broadband networks to support advanced communications.