

Redline's Wireless System Improves Public Safety in Querétaro

CUSTOMER



City of Santiago de Querétaro, Mexico

INDUSTRY

Local & State Government

THE CHALLENGE

- Connect video surveillance cameras.
- Maximize coverage to minimize impact on historic architecture.
- Provide reliable video in a tough urban environment.

THE SOLUTION

- AN-80i operating in the 4.9 GHz public safety band.
- VideoLINK software to provide high quality video.

THE RESULTS

- No disruption to historic sites.
- Reliable operation across all operating and environmental conditions.
- Improved public safety.

The City of Santiago de Querétaro in Querétaro state Mexico was founded in 1531. With the population nearing a million people and tourism becoming a major economic engine the public safety department decided to improve security and traffic flow for its citizens and tourists by installing a video surveillance system throughout the city.

Without a wired data infrastructure a wireless network was the only choice to connect the cameras. However, Querétaro's topography and several laws protecting Mexico's historic buildings meant selecting the right wireless system would be critical. The challenge was to select a system that performed well despite line-of-sight issues and a system with significant capacity to minimize issues with laws that prohibit even the government from disrupting the surrounding soil or attaching equipment to the exterior of historic buildings.

RETO Industrial, a telecommunications integrator in Latin America, recommended a broadband wireless CCTV network infrastructure using Redline's award winning AN-80i operating in the 4.9 GHz public safety band to connect cameras situated in strategic locations throughout the city.

REDLINE MEETS THE CHALLENGE

Urban areas present significant line-of-sight issues due to the topography, buildings and foliage that come between the cameras and the sector controllers. The AN-80i achieves the highest possible signal integrity within the 50 MHz bandwidth constraint of the 4.9 GHz public safety band thus delivering excellent non-line-of-sight (NLOS) range by using innovative third generation orthogonal frequency-division multiplexing (OFDM) technology.

The cameras, each with maximum (4CIF) video resolution, were mounted on public utility poles already in place throughout the city which mitigated issues related to the laws governing historic sites. The low power consumption of the AN-80i allowed the wireless system and cameras to be powered via Power over Ethernet (PoE) derived from the existing utility network thereby saving hundreds of dollars of installation costs per site.

The AN-80i's high capacity (108 Mbps UBR), and low latency (less than 1 msec) provided excellent coverage. Each AN-80i supported up to 16 cameras per sector (most vendors handle a maximum of six) with an average radius of 3 km from the base or up to 25 km

in less dense areas. The AN-80i's efficient use of the 4.9 GHz spectrum also minimized the number of sectors adding flexibility to RF planning.

The AN-80i provides consistent throughput and latency performance to ensure high quality video under all operating conditions. Consistent performance is provided by hardware accelerators that process up to 176,000 packets per seconds regardless of packet size to deliver low latency and twice the throughput of the nearest competitor. Additionally VideoLINK software provides data shower caching to eliminate lost images, an important feature when monitoring fast flow traffic conditions.

Today the city is enjoying enhanced public safety. The Redline network gives public safety officials a constant, live bird's-eye view of traffic, activity at bus stops, on street corners and provides early detection of suspect activity making police investigations and law enforcement easier.



"Building a wireless network with the capacity to achieve full coverage without impacting historic sites was a key requirement. Redline's capacity and proven track record across Mexico in delivering network solutions for public safety made them the obvious choice when we made this critical business decision."

Amador Najera Ruiz
Director of Operations
RETO Industrial

ABOUT REDLINE COMMUNICATIONS

Redline Communications (www.rdlcom.com) is the creator of powerful wide-area wireless networks for the world's most challenging applications and locations. Used by oil and gas companies, militaries, municipalities and telecom service providers, Redline's powerful and versatile networks securely and reliably deliver M2M, voice, data and video communications.