

# Infinet Wireless improves communication capabilities for Mexico-based MetroCarrier with solar-powered wireless network



**MetroCarrier** has more than 20 years' experience providing state-of-the-art telecommunication services driven by its innovative and digitally transformative approach. The Mexican company has implemented communication solutions in the telephony and Internet markets, improving the global connectivity processes of their customers, including services such as personal internet. To provide connectivity in the hilly terrains of Jalisco, Mexico, the company requested the services of **Infinet Wireless** and its longtime partner **GTMS** to install an innovatively designed and effectively implemented wireless network.

## Navigating tough terrains

MetroCarrier's customer requested a symmetric service at 20 or 50 Mbps to provide high-performing, stable internet connectivity. However, the nature of the terrain meant that terrestrial infrastructure, such as fiber optic cables, wasn't an option. The hard-to-reach and awkward position of the location requiring the connectivity upgrade, in the hills of Guadalajara, presented a challenge for establishing a network.

Infinet Wireless and GTMS, to provide connectivity at distances of up to 20 km whilst overcoming obstacles such as obstructive hills in the area, decided to install a solution using a mixture of solar panels and wireless links. An orography

analysis, measuring the location's topology, was performed with National Institute of Statistics and Geography's (INEGI) and NASA's Shuttle Radar Topography Mission's (SRTM) digital databases to select the ideal location for the repeater device.

Subsequently, a 9m braced tower and solar electric system – equipped with solar panels, a battery bank and an inverter – was installed at the ranch. At CTC Obregón, the tower was increased

in length from 15m to 24m. At the San Joaquín ranch, a mast and solar electric system inverters were installed.

To enable the transport links in the Wireless Access Network (WAN), and to extend coverage of the Local Access Network (LAN) for end users at the ranch, 5.8 GHz free band Wi-Fi links were installed. This enables the end user to benefit from enhanced speeds and reduced channel interference.

***“The hilly terrain presented a significant challenge when setting up the links. However, thanks to our expertise and experienced workforce, we’re able to operate in terrains and deliver networking solutions in locations considered unreachable. The engineering team after, assessing the feasibility of the project, was able to successfully assign a work team to complete what the project to the standard expected by MetroCarrier”***

said **Mario De La Rosa, CEO of (GTMS) Global Telecommunications Microwave Solutions.**

### **Exceeding expectations**

The requirements of the customer were exceeded thanks to the network design and high performing solutions. GTMS successfully designed a network that delivered the symmetric 20 or 50 Mbps service requested by the customer with a record implementation and installation time. Furthermore, the customer received a throughput capacity of 300 Mbps, exceeding their expectations of the service.

The quality of Infinet Wireless' solutions guaranteed stability and high performance. Infinet Wireless used a selection of links to meet the requirements for the network. In CTC Ciudad Obregon, a 17.75 km<sup>2</sup> ranch, a repeater was installed with external 32 dBi antennas

and Infinet's [InfiLINK XG](#) point-to-point (P2P) solution. At the San Joaquín, a repeater was used on the 2.26 km<sup>2</sup> ranch, with 23 dBi antennas and the InfiLINK 2x2 [LITE](#) P2P equipment. The cost-effective medium capacity LITE series can be upgraded to Infinet Wireless' PRO solution, meaning the customers' capacity can be expanded.

All of the links used have an availability of 99,999%.

The customer will also benefit from a continuous service. The network has a 72-hour backup provided by solar panels and wireless links that can work regardless of weather conditions. Energy consumption savings were made, meaning the customer made significant cost savings as a generator isn't needed to continuously power the network.

## Satisfied customers

*"In the selection process, despite evaluating a number of competitors' solutions, the scope and stability of Infinet Wireless' solutions stood out as the best option. So far we have 60 links connected as a result of the project. We're impressed by the reliability of both the links and the Infinet Wireless team and hope to continue growing with the brand,"* said **Sergio Zepeda, Director of Engineering for MetroCarrier, Guadalajara, Mexico.**

Zepeda expressed "the trust and support of Infinet Wireless solutions will allow us to continue with this quality margin and open new markets".

Although here was a tight time frame to complete the work, the partners involved were able to complete the project on schedule and to a standard that impressed the customer.

"With Infinet Wireless' solutions, we have managed to meet the needs and challenges of our customers in the region. The obstacles presented by MetroCarrier's request have been overcome and we will continue to implement more projects hand in hand with Infinet Wireless in the future," added GTMS' De La Rosa.

## About GTMS

GTMS is a has more than 15 years of experience in various Telecommunications projects throughout Mexico. This company has been a provider of services and technological solutions for all sectors, has managed and installed Infinet Wireless solutions for more than 10 years. For the El Rancho project, GTMS decided to use Infinet

Wireless for its scope and stability, so far, there are more than 60 links for MetroCarrier, others for carriers and end users.

## Requirements

- Provide connectivity in distances of up to 20 km
- Overcome obstacles by obstructing hills in the area

## Solution

- External 32 dBi antennas: [InfiLINK XG Um/5X.500.2x500 equipment](#).
- LITE Smn / 5X.300.2x300.2x23 upgrade 300 equipment, with Integrated 23 dBi antenna
- Use of Solar Electric Systems and wireless links
- [InfiPLANNER](#), Infinet Wireless' Radio Planning Tool, guaranteeing the receiver (RX) level of the system, as well as its availability and throughput

## Customer benefits

- The requested throughput of 20 Mbps was exceeded and the customer received a capacity of 300 Mbps. Infinet Wireless also ensured the stability and performance of the link was maintained.
- Record implementation and installation time.
- The cost was optimized due to the combination of technologies
- The use of solar panels ensured energy consumption cost savings were achieved. Furthermore, a generator isn't needed to power the network and provide Internet connectivity.