Teletics Application Note

# Securing Gas Utility Sites with WOPX

Rev 2.0 – Feb 2009

In 2005, a major Natural Gas utility located in Edmonton, Alberta, Canada had a problem. They had a natural gas gate station located on an acreage, and did not have any telephone service nearby.

The basic function of a natural gas gate station is to ensure that the pressure from the feeder pipeline gets distributed evenly down to smaller pipelines, and then each of the smaller pipelines has a way to shut down in the event of an accidental pipeline breach, such as an accidental rupture caused by a street repair crew.

Although the phone company operating in the area was mandated by regulation to build phone lines out to anyone in the province that required phone service, there was not any stipulation on delivery times. The utility required a monitored security system onsite to meet safety requirements, so they needed a phone line at the site.

A Teletics distributor provided a complete turnkey solution to this utility consisting of a Wireless Off Premise eXchange (WOPX) system, plus cabling and antennas. A typical WOPX system consists of the following equipment:

Teletics WOPX System Diagram

Up to 15 Miles
(20 kilometers)

WOPX can support:
- Phone
- Fax
- Modem
- Internet
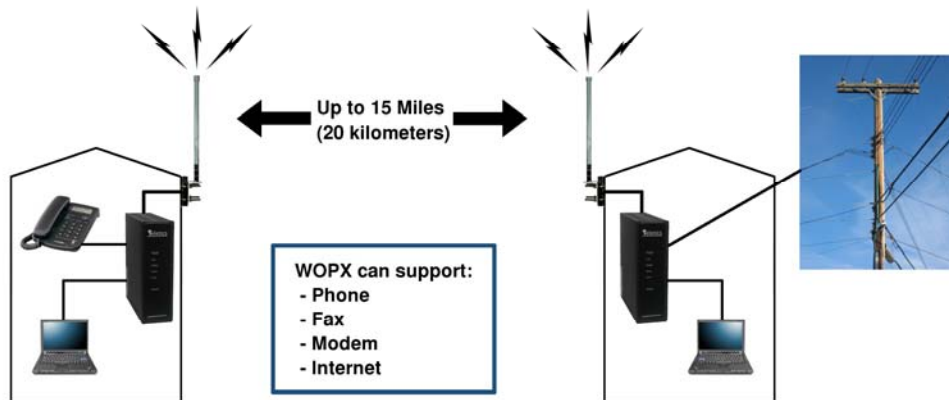
Antenna heights are established by doing an RF Link design for the frequency of WOPX system purchased, or using the guidelines in the WOPX manual. There are currently 2 frequencies of WOPX system. 2.4GHz and 5.8GHz. In this case, a 50 foot tower was erected at the gate station, and the Line end antenna was located on the roof of a 4 storey building within 2.4GHz line of sight. The two sites were about 3 kilometers (2 miles) apart.

The installation of the line side WOPX on the 4 floor building rooftop was accomplished through a site survey to determine best outdoor antenna placement and where the

LMR400 RF cable could enter the building, through a lightning arrestor and into a mechanical room. Once the best location of the WOPX was determined, the local phone company then provided a phone line nearby. The installation of the WOPX simply involved running an RJ-11 phone cable to the WOPX, attaching the RF cable leading to the antenna, and plugging in the AC adapter.

At the gas gate station (remote) end, the phone WOPX was installed on a communications panel in the same building as the security system. The tower was attached to the side of this building and a professional antenna rigger installed the yagi antenna and an LMR400 cable run to the antenna from the inside of the building A lightning arrestor was installed and then an LMR195 jumper was run to the WOPX. Regular 120VAC power was available at the site, so the standard WOPX wall adapter was used to power the WOPX. Once power was applied, the phone line on the WOPX acted identically to the phone line at the 4 floor building.

Once installed, the WOPX system provided a phone line extension over radio, thereby giving the utility the capability of doing security monitoring through their alarm monitoring company.

The security panel at the gate station communicated with the alarm monitoring / security company via 2400 baud dial up modem. Both dial in and dial out is fully supported.

For further information on this application of the Teletics WOPX system, please contact Eric Larson, Vice President – Sales and Marketing, Teletics Inc. at (403) 681 6380, or your local Teletics distributor.