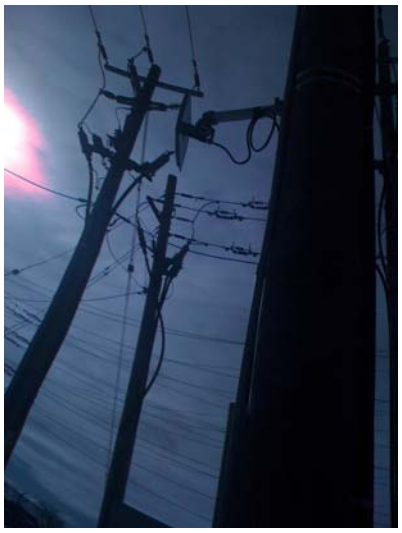


Teletics Application Note

Wireless Phone Line Sharing for Electrical Revenue Meter Reading

"The String"

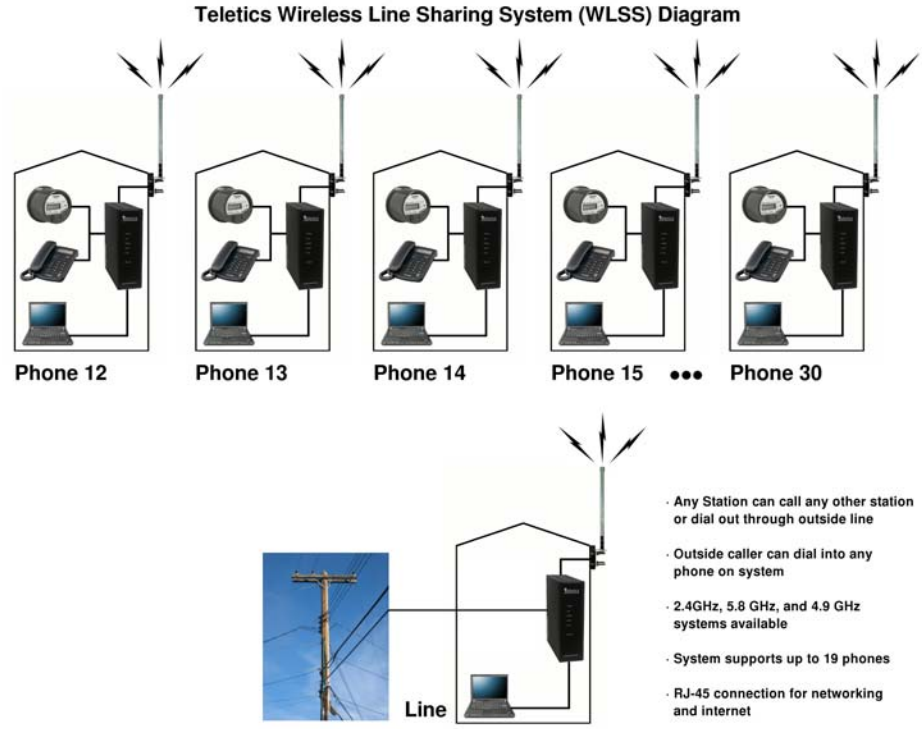
Rev 3.0 – March 2010

Most Electric Utilities in North America operate a meter data gathering system called MV90. MV90 uses a dial out modem pool to call out to thousands of electrical meters located throughout their distribution grid.

Many of these meter sites have multiple meters that are within a few miles/kilometers of each other, particularly in areas where deregulation or new services creates the requirement for new revenue meter installations.

Telcos charge a significant premium to install and operate a phone line in an electrical distribution location. The basic problem is the high voltage at these sites, and the cost of the electrical isolation and engineering that is required to ensure that these high voltages will never find their way back into the carrier's network.

If an electric utility has access to one phone line within a few miles of a number of meters, ***the String*** can be used to share the phone line with up to 19 other meters.



When anyone dials into the LINE unit on ***the String*** system, the call is answered and the LINE ***String*** unit gives a second dial tone. Once you receive the second dial tone, you simply dial the two digit extension (12 through 30) of the Meter you want to dial into. The call is then forwarded and the appropriate meter is interrogated by MV90. With MV90, this is accomplished by simply adding about 5 commas and the two digit extension to the end of the dial String for each meter.

Instances where the meter is required to dial out, the line is simply shared on a first come, first served basis. If the line is currently in use by one of the other meters, the second meter to try to use the line will get a busy signal.

Any phone unit in the system can also dial any other phone in the system by dialing its extension number (12 through 30). Phone units are required to add a "9" in front of the number being dialed to access the LINE.

Teletics technical support staff work with our distributors to assist with the integration of our systems into the utilities infrastructure. To date, we have experience with many meter designs, including Schlumberger, Itron, and others. We also have direct experience with the MV90 system.

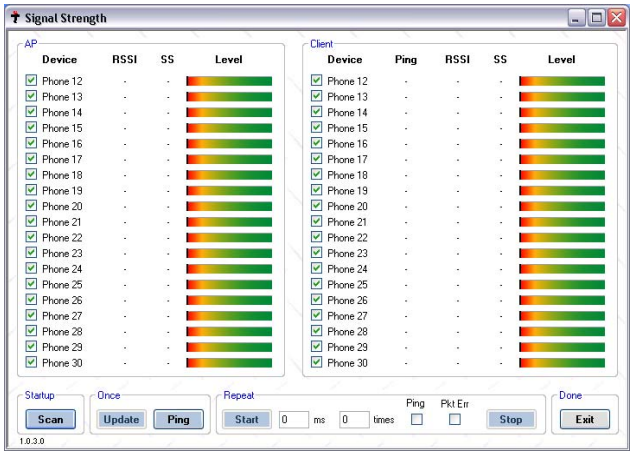
The Teletics distributor provides a complete turnkey solution to the utility consisting of ***the String*** system, plus cabling and antennas. A typical String system consists of one Line unit and multiple Phone units, as required by the number of meters to be dialed into.

Antenna heights are established by doing an RF Link design for the frequency of ***the String*** system purchased. There are currently 2 frequencies of String system; 2.4GHz and 5.8GHz.

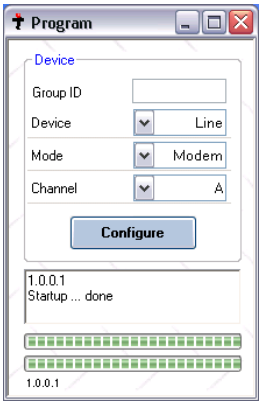
The installation of the line side String can either be inside a building, where an AC wall adapter supplies power, or inside a NEMA enclosure with 12VDC power and 12VDC battery system for solar panel operation. Power consumption on the String can be as low as 8W. ***The String*** is rated for -40 to 50C (-40 to 125F) operation, if outside operation is required.

At the meter end, the phone String units are typically installed on a communications panel in the same building as the electrical meter. Antennas are typically mounted on a pole style roof mount. A standard RJ11 cable is run from ***the String*** to the electrical meter.

Once installed, ***the String*** system provides phone line sharing over radio. Thereby giving the electrical utility the capability of dialing into the electrical meter using their conventional MV90 system, and providing decreased cost as well as phone line electrical isolation.



Additionally, Teletics provides all necessary software with ***the String*** system to allow field installers and engineering groups to ensure they have correct antenna installation and can program ***the String*** units during installation.



TUtil String allows the communications engineer the ability to program String units, interrogate their settings, check radio signal strength, and update radio firmware with a very simple, easy to use program that runs on any Windows XP or Vista computer.

TUtil String is available free of charge to any Teletics String customer.

For further information on this application of ***the String***, please contact Eric Larson of Teletics at 403 681 6380, or for a distributor near you, please visit our website at www.teletics.com

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