Antennas for Utility Applications

Automatic Meter Reading (AMR) is the technology of automatically collecting data from meters (gas, water, electric) and transferring that data to a central database for billing and/or analyzing. AMR technologies include handheld, mobile, fixed network, Wi-Fi and other network technologies. Benefits of AMR include efficiency of meter reading, less liability (meter readers not having to enter the customer’s property) and accuracy.

Antennas are an integral part of any AMR system. Small, permanently sealed modules for transmission are connected to water meters or are integrated into electric and gas meters. Antennas are used in the collection, transmission and receipt of data.

Data Collector Units (DCUs) are intelligent network devices that receive, process, and store meter reading information. DCUs forward this information to a control center located at the utility. Data collection can be done through the use of handheld units where a meter reader carries a handheld computer with a built-in or attached receiver/transceiver or by “drive-by” metering where a reading device is installed in a vehicle. The meter reader drives the vehicle while the reading device automatically collects the meter readings. Drive-by systems often consist of a laptop or proprietary computer, software, RF receiver/transceiver, and external vehicle antennas.

Data transmission is accomplished via a fixed network Automated Meter Infrastructure (AMI). AMI is a method where a network is permanently installed to capture meter readings. This method can consist of a series of antennas, towers, collectors, repeaters, or other permanently installed infrastructure to collect transmissions of meter readings from AMR capable meters.

Computers at the utility’s control center collects, validates, processes and stores data transmitted by DCUs. It provides billing, customer service, operations, and other utility departments with timely access to comprehensive account information.

Pulse/Larsen manufactures a diverse line of antennas for Utility and Smart Grid applications. Frequencies cover UHF/LTE/WiFi/GPS bands (including multi-bands). Applications include embedded solutions, portables for handheld units, vehicular mount mobiles and small base station antennas for data transmission.

The Smart Grid

By enabling both new and existing electric grid components to communicate with each other, electric cooperatives can better monitor conditions, collect information, and remotely control devices over a distribution network. Often called the Smart Grid, this system can use various technologies, as shown here.
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Where are antennas needed?
From the DCU to the vehicle in the field to the substation to the utility’s control center,
Pulse/Larsen has a solution for all of your antenna applications for AMR/AMI.
Don’t forget to ask about our custom embedded solutions!

Pulse/Larsen Portable Antennas
Frequencies from 136 MHz to 5.9 GHz
(multi-band options available)

Pulse/Larsen Mobile Antennas
406 MHz to 5.9 GHz
Most frequencies available in a variety of mounting styles (NMO, direct, glass, magnetic)
In many different form factors (low profile, stealth blade, low profile transit, whip)

Pulse/Larsen small base station antennas for sub-station remote monitoring and communications control centers Bracket options available.

Yagis
• YA Series: 406 to 512 MHz, 470 to 960 MHz, 1395-1450 MHz

Fixed Base Antennas
• BS Series: Low/Mid Band, UHF, VHF
• FB Series: 136-230 MHz, 406-960 MHz, 2.4 GHz

Radome Omnis
• RO Series: 806-960 MHz, 1710-2170 MHz, 2.4 to 6 GHz, and multi-bands