Wireless Automated Meter Reading for Power Distribution Networks
2009-12-16

Location / Country: USA
Product Solutions: ioLogik E2212
Smart Ethernet Remote I/O with 8 DIs, 8 DOs, 4 DIOs

Introduction

Project Introduction
In the Americas and Europe, electric power is provided by a number of private power plants distributed over wide areas. Optimizing distribution and transmission to meet market demand is always a challenge, particularly since power suppliers need to monitor data usage and combine the data for power generation, distribution, and transmission. Deploying long range wireless automated meter reading will allow power suppliers to better gauge and respond to market demand and optimally allocate energy distribution to control rising energy costs and service interruptions.

The customer in this application is a cooperatively owned power services company with over $816 million in assets and nearly 4.3 million MWh in energy sales as of 2007. It supplies power and provides other management services in the western US. The company provides leadership and management of power supply options and continues to implement increasingly sophisticated power management techniques and innovative technologies, giving utilities in the region the ability to offer low-cost power options at stable prices.

System Requirements
- Long range wireless transmission (satellite, GPRS, WCDMA, microwave, etc.) over wide territories.
- Need to transmit data in a low bandwidth network environment.
- Self-monitor connection status, when the connection fails, system reboots to restore communication.

Moxa Solution
A well-designed communications structure is important for monitoring the power distribution efficiently. The customer used a current transformer together with a meter to measure how much electricity has been used. When current flows through the current transformer, the meter transmits a pulse output, and Moxa’s ioLogik E2212 is used to keep track of how much energy has been used. In addition, the ioLogik E2212’s active report function helps deliver event messages automatically, and send the counter value back to the central site every few seconds for generation and distribution references.

This kind of remote monitoring system is often installed in the middle of nowhere, making maintenance both challenging and costly. To ensure the communication system is stable, ioLogik’s watchdog timer was used to monitor the connection status. If the communication fails, the ioLogik E2212 will send an output to an external relay timer that shuts the system down for five minutes before restarting the system. In addition to active messaging and the watchdog timer, another major benefit is Moxa’s simple and intuitive IF-THEN-ELSE Click&Go control logic, which helps users reduce programming time from days to minutes, and also helps to keep maintenance costs at a
Why Moxa

- Active counter value report makes it possible to transmit data in low bandwidth environments
- Watchdog timer for connection failure monitoring and system reboot
- Remote web management interface allows remote system configuration updates
- Easy-to-use IF-THEN-ELSE Click&Go logic saves setup time

Product

ioLogik E2212
- Active event report
- Watchdog timer for self-monitoring
- Easy-to-use Click&Go logic, no programming required