

MultiTech Solutions Power Smart Grid Automation

Electricity Is A Vital Part of Daily Life That's Constantly Evolving

It's no surprise that since the inception of the electrical grid in the late 1880's technology has advanced. Initially distribution systems were designed to support unidirectional power flows from large, centralized generation points as it was dispersed geographically.

By the 1960's, when "the grid" had reached virtually everywhere across the globe, it wasn't uncommon for blackouts, brownouts, and power cuts to happen during peak times or inclement weather, as the grid couldn't keep up with the demands placed upon it.

As electrical usage has become an absolutely vital part of daily life, the power grid in its original form no longer meets the demand of both utility operators and consumers. In order for utility companies to keep their grids running at peak performance, they rely heavily on Distribution Automation (DA) systems.

Successful DA operations utilize a series of technologies to collect, automate, analyze, and optimize data to improve the operational efficiencies of power distribution systems.



The Challenge | 100+ Year-Old Technology Struggles To Meet Today's Demands

Unfortunately - though not unsurprisingly - our 100-year-old power grid is not equipped to meet the demands of the public to provide better quality, cleaner, and more affordable power while also complying with governmental regulations and more frequent extreme weather events.

Additionally, our electrical grids are now supplemented via wind and solar - in addition to traditional fossil-fuel-generated electricity. While wind and solar power are both certainly more environmentally friendly, they're also highly variable, and their distribution needs to be closely monitored.

To accurately monitor utilization and distribution, electric utilities are utilizing smart grid technology. In the 1980's, smart grid technology emerged as a way to remotely monitor electricity usage from large customers. Throughout the 1990's, it advanced and evolved to utilize Advanced Metering Infrastructure - and now Smart Meters - that can store how energy is used throughout the day.

However, remote monitoring usage - as well as other data across the grid - and taking immediate action to reroute power during situations such as blackouts, ROPE events, and equipment failures is no easy feat. It requires connectivity across thousands upon thousands of IoT sensors that can relay data back to the utility in real-time.

The Solution | Ruggedized MultiTech rCell 100 Routers and Mobile Mark Antennas

The MultiTech MultiConnect rCell 100 Series, with its' ability to provide connectivity to thousands of IoT devices and applications deployed throughout the grid, is the perfect solution for utilities seeking to upgrade their smart grid capabilities.

Paired with Mobile Mark LTMG402 antennas that contain four separate antennas, all in one compact and extremely durable antenna housing, it's a great match for the rCell 100 with two LTE antennas, one dual-band WiFi antenna, and one GPS antenna.

LTE MIMO modems like those in the rCell 100 offer greater speed and capacity than earlier modem generations. They achieve this by sending RF signals on multiple antenna elements to maximize the amount of information transmitted and received.

As a complete solution, with MultiTech's embedded mPower Edge Intelligence, managed through their Device HQ, and with coverage enhanced by high-powered antennas from Mobile Mark (like the LTMG402), the rCell is well suited for various utility applications in electric and power distribution.

Industry Profile

- Electric Utilities
 - FLISR, DSDR, DTT Systems
 - Distribution Automation
 - Smart Grid Management

Technology Solutions

- MultiTech rCell 100 Series
- MultiTech DeviceHQ
- mPower Edge Intelligence
- Mobile Mark LTMG402

Targeted Results

- Rugged and Reliable Devices
- Real-Time Sensor Data
- Lower Power Wide Area
- Easy Use and Integration
- Remote Management
- Cost Savings and ROI



MCA delivers public and private electric utilities the end-to-end communications solutions they need to support their mission-critical power distribution operations.



MultiTech rCell 100



Distribution automation allows utility companies to monitor usage and improve the speed, cost, and accuracy of key distribution processes, including:

- Fault Detection
- Feeder Switching and Outage Management;
- Voltage Monitoring and Control
- Reactive Power Management

Distribution Automation, and the system components that enable it, allows public and private electric utilities to remotely maintain and upgrade the grid, creating a more reliable and robust distribution infrastructure.

The Results | [Reliable, Secure, and Cost-Effective Solutions for Maintaining IoT Devices](#)

The easy-to-use interface of MultiConnect rCell 100 Series Routers from MultiTech allows for quick configuration and over-the-air upgrades. Once deployed, utilities are able to remotely monitor and maintain the grid while also reducing operating expenses. The longevity of the rCell 100 means that equipment replacement costs are reduced, as are the labor expenses that are associated with them.

MultiConnect® rCell 100 Series of industrial cellular routers, optimized for secure M2M and IIoT applications, with mPower™ Edge Intelligence embedded software, offer a robust ethernet or serial network interface platform ready to deploy. Its' intuitive user interface and cloud device management allows for quick configuration and over-the-air upgrades.

Features like WAN failover, secure software updates, advanced firewall and routing configuration, and certificate management, provide our utility clients with secure and redundant communications infrastructure critical to the reliability of remote smart grid monitoring systems.

The Team | [Device Provisioning, Activation and Installation Services](#)

For over 25 years, the CNS team within MCA (*formerly known as USAT*) serves the nation's critical infrastructure by creating secure communication networks that pass data wirelessly between key systems — linking personnel and machine assets within fixed and mobile applications.

We help our utility clients deploy the communication networks and equipment they'll need to optimize the performance of their sensors, processors, and system components (*like reclosers, capacitor bank controllers, voltage regulators, and more*) within their various automated distribution, FLISR, DSDR, and DTT systems spread across wide geographies.

Mobile Mark LTMG402



CONTACT US TODAY TO START MAKING YOUR WORKPLACE BETTER



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