
Ambient Corporation

Smart Grid Solution Provider Ambient Corporation Connects High-Profile Deployments with AirPrime Embedded Modules



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Ambient is a leader in smart grid technologies and equipment. The Massachusetts-based company uses open standards-based technologies and ample industry experience to help utilities bring two-way communications and intelligence for modernizing the power grid.

BUSINESS CHALLENGE

Energy suppliers worldwide are building smart grid infrastructures to optimize power distribution and create a more efficient grid. Ambient helps utilities achieve this vision by providing innovative communications solutions, such as the Ambient Smart Grid Communications Node. The smart grid node communicates with multiple “smart” meters, sensors and controllers and backhauls data to the utility’s central operations center. Ambient’s smart grid communications node allows utilities to connect to almost any type of meter or smart grid end-device using a variety of communications services, coupled with their backhaul connection to the public cellular networks.

“Utilities are just beginning to embrace communication technologies and all they can bring to enhance the grid,” says Ram Rao, senior vice president and chief technology officer, Ambient.

“Wireless communications, a critical component of these efforts, offers utility operators and customers significant advantages. Using existing cellular networks, our utility customers can gain excellent performance at a low cost, and deploy smart grid elements much more quickly and easily than with other networks.”

To realize the benefits of cellular networks, utilities need wireless solutions that provide the high performance and reliability that critical infrastructure demands.

“Modern cellular networks were designed primarily for cell phones and mobile applications,” says Rao. “Our customers are using cellular technology very differently. A metering infrastructure may have much higher density over a given area than you would see with traditional cellular services. That presents potential challenges, both for the carrier and for companies like ours building smart grid technologies.”

SIERRA WIRELESS AIRPRIME EMBEDDED WIRELESS MODULE

Ambient and its large utility customers needed a cellular solution designed specifically for machine-to-machine (M2M) communications. Working with major utilities such as Duke Energy on large-scale, high-profile smart grid deployments, Ambient also needed a solution that provided rock-solid reliability and the highest quality. The company turned to the worldwide leader in M2M wireless modules:

Sierra Wireless.

“Sierra Wireless is a recognized leader in the embedded solutions marketplace,” says Rao. “They embraced this technology early on, and they have become experts at understanding the M2M environment and the unique challenges it presents.”

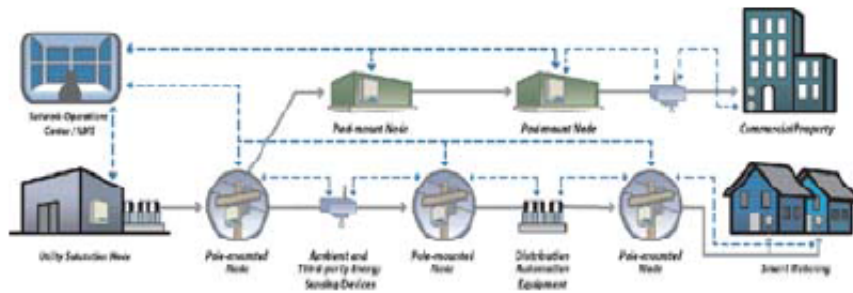
Ambient uses the AirPrime MC5728V embedded wireless module to provide 3G connectivity for Ambient smart grid communications nodes. The modules, operating on the Verizon Wireless network, provide the high-quality, reliable connectivity that customers like Duke Energy demand to support critical infrastructure.

“The overall scale and scope of the Duke Energy network is significant,” says Rao. “We have more than 45,000 nodes using Sierra Wireless modules in Ohio alone. Those nodes provide connectivity to hundreds of thousands of electric meters and gas meters, and we are now beginning to support other distribution system applications as well.”

Rolling out a smart grid solution on this scale was a significant undertaking. To help the process go smoothly, Ambient benefited from the support and technology expertise of Sierra Wireless.

“Sierra Wireless does an excellent job of supporting all of the different hardware and operating system platforms we need to support,” says Rao. “They make it easy for us to develop our

applications and integrate cellular connectivity into our products. Without that support, we would have had a significantly more difficult time getting where we are today.”



RESULTS

Today, Ambient partners with major stakeholders in the power grid revolution, including Duke Energy and Verizon Wireless. By working with Sierra Wireless to build its innovative communication platforms, Ambient is confident that they can help make the vision of the smart grid a reality.

“When we decide to work with a company, we look to them to be partners, not just vendors,” says Rao. “This is especially important in developing solutions for the smart grid, as we are still in the very early stages of these technologies. There are very complex issues to navigate to deliver smart grid solutions, and Sierra Wireless has been an excellent partner in helping us overcome them.”

Sierra Wireless is also playing an important part in helping Ambient grow. The experience and close relationships Sierra Wireless has with wireless carriers worldwide makes it easier for Ambient to adapt its solutions to enter new markets.

“The fact that the Sierra Wireless modules are certified and interoperable with many carriers is very important to us,” says Rao. “Since Sierra Wireless offers similar modules for different carriers, reconfiguring our solutions for a new market is a relatively simple process. That makes it easier for us to understand and move forward in new markets, and accelerates our ability to expand our business.”

SOLUTION:

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- Sierra Wireless AirPrime MC Series Embedded Wireless Module

KEY BENEFITS:

- Reliability and stability
- Expert support and integration
- Accelerated business expansion