Ambient Corporation

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

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

BUSINESS CHALLENGE

Energy suppliers worldwide are building smart grid infrastructures to optimizepower distribution and create a more efficient grid. Ambient helps utilities achievethis vision by providing innovative communications solutions, such as the AmbientSmart Grid Communications Node. The smart grid node communicates withmultiple “smart” meters, sensors and controllers and backhauls data to the utility’scentral operations center. Ambient’s smart grid

communications node allowsutilities to connect to almost any type of meter or smart grid end-device using avariety of communications services, coupled with their backhaul connection to the public cellular networks.

“Utilities are just beginning to embrace communication technologies and all theycan bring to enhance the grid,” says Ram Rao, senior vice president and chieftechnology officer, Ambient. “Wireless communications, a critical component ofthese efforts, offers utility operators and customers signifi cant advantages. Usingexisting cellular networks, our utility customers can gain excellent performanceat a low cost, and deploy smart grid elements much more quickly and easily than with other networks.”

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

“Modern cellular networks were designed primarily for cell phones and mobileapplications,” says Rao. “Our customers are using cellular technology verydifferently. A metering infrastructure may have much higher density over a givenarea than you would see with traditional cellular services. That presents potentialchallenges, 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 designedspecifi cally for machine-to-machine (M2M) communications. Working with majorutilities such as Duke Energy on large-scale, high-profi le smart grid deployments,Ambient also needed a solution that provided rock-solid reliability and the highestquality. The company turned to the worldwide leader in M2M wireless modules:

Sierra Wireless.

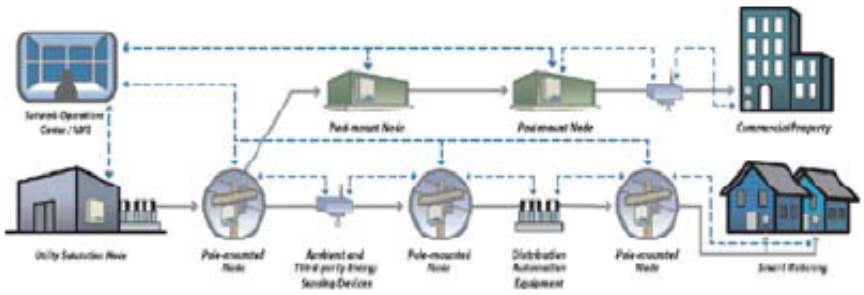
“Sierra Wireless is a recognized leader in the embedded solutions marketplace,”says Rao. “They embraced this technology early on, and they have becomeexperts at understanding the M2M environment and the unique challenges it presents.”

Ambient uses the AirPrime MC5728V embedded wireless module to provide3G connectivity for Ambient smart grid communications nodes. The modules,operating on the Verizon Wireless network, provide the high-quality, reliableconnectivity that customers like Duke Energy demand to support critical infrastructure.

“The overall scale and scope of the Duke Energy network is signifi cant,” 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 metersand 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 signifi cant undertaking. Tohelp the process go smoothly, Ambient benefi ted from the support and technology expertise of Sierra Wireless.

“Sierra Wireless does an excellent job of supporting all of the different hardwareand operating system platforms we need to support,” says Rao. “They make iteasy for us to develop our applications and integrate cellular connectivity into ourproducts. Without that support, we would have had a signifi cantly 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 confi dent 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 certifi ed and interoperable with many carriers is very important to us,” says Rao. “Since Sierra Wireless offers similar modules for different carriers, reconfi guring 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:

- Sierra Wireless AirPrime MC Series Embedded WIreless Module

KEY BENEFITS:

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