

XBee Modules Reduce Hotels' Energy Costs



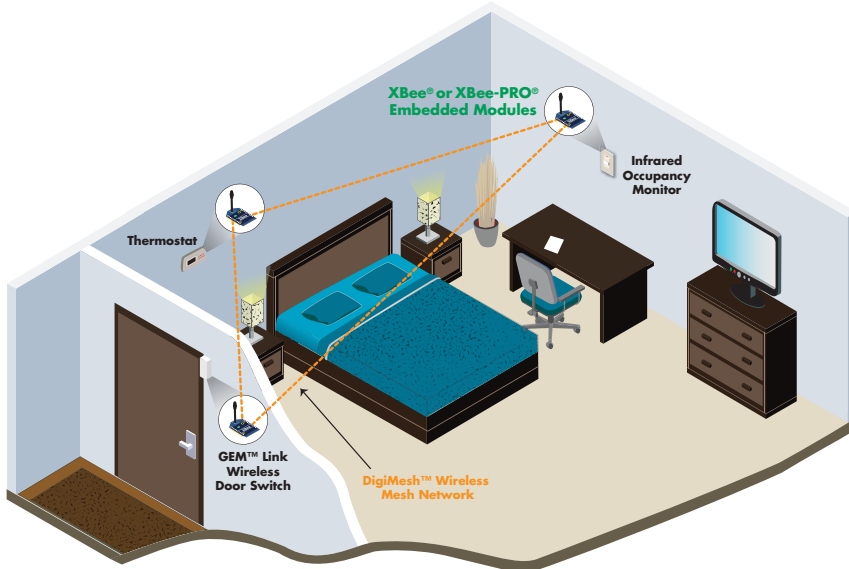
Background

Lodging Technology is the originator of infrared sensor-based hotel energy management technology and has been providing innovative energy management solutions to hotels since the 1980s. GEM System®, Lodging Technology's flagship product, reduces energy costs 35 to 45 percent with typical paybacks under two years and ROI of 50 to 60 percent. Primarily designed for hotels, the system is equally applicable for college classrooms, dorms, offices, and military lodging facilities.

Until recently, GEM System was a hardwired system. To connect the different components of the system, Lodging Technology ran wiring under hotels' carpets. For deployments in existing hotel properties, this often proved to be difficult and timely. It also limited Lodging Technology's prospect list to only hotels with carpeted floors and properties in cities with minimal wiring codes. Lodging Technology has been evaluating wireless technologies for years and waiting patiently for the market to evolve.

"We have been doing more and more condo-hotels and resorts that are completely tiled, therefore having no carpet to conceal the small wiring for hardwired systems," said William Fizer, founder and president, Lodging Technology. "Wireless opens up new markets for us and makes the system easier to install and maintain."

With the evolution of ZigBee mesh networking technology, Lodging Technology finally found the ideal wireless solution for its new GEM Link™ Wireless product. Following exhaustive research, it selected Digi's XBee ZigBee module because of the product's small size, along with its ease of use and maintenance.



"Digi answered all our questions and was helpful in the initial design. We are very pleased in the way they work with us as well as our manufacturing partners."

- William Fizer, founder and president, Lodging Technology

Application Summary

Application: Occupancy sensor-based hotel energy management

Industry: Hospitality

Company: Lodging Technology

Challenge: Lodging Technology needed an easy way to add ZigBee wireless technology to its GEM Link hotel energy management solution.

Solution: XBee ZB ZigBee OEM RF modules provided a plug-in solution to wirelessly enable sensors, switches and transceivers to control room temperatures.



“Everything was done in the XBee module that needed to be done,” Fizer said. “We chose the XBee because it was a plug-in system. Their products are designed to be simple. The ease of use and small size of the module was very attractive. Digi knows how to build ZigBee radios, and we don’t. We are experts in energy management for hotels.”

XBee Modules Enable First GEM Link Wireless System

Lodging Technology installed its first beta wireless GEM Link system in April 2008. The GEM Link system consists of three parts: a Passive Infrared occupancy sensor mounted in the corner of a guest room; a Transceiver module connected to the HVAC unit; and the Entry/Patio door switch module mounted on the wall beside the door frame or on the door. Each component includes an XBee ZigBee module. The three components work in tandem to determine if a room is occupied and to adjust the ac/heat accordingly when a guest is not in the room.

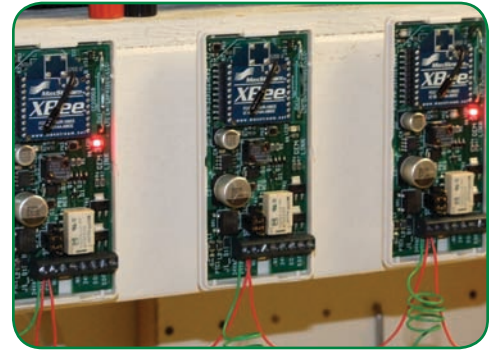
When a guest enters a room outfitted with a GEM Link Wireless system, the door switch transmits to the HVAC Transceiver unit that the door is open via an XBee module. The infrared module then detects the heat of the guest in the room and transmits to the HVAC unit that someone is in the room also via an XBee module. When the door closes, control of the HVAC unit is released to the guest because it now knows someone is in the room and the door is closed. If there is a patio or balcony door, another wireless door switch can be added to that door as well.

In addition to being easier to deploy and opening new markets, the new wireless system includes added features. All GEM Link Wireless systems now include a Programmer Maintenance Module (PMM), a handheld module with a custom keypad and digital display for quick, easy programming of the GEM Link system. The PMM is used by installation technicians and hotel maintenance personnel to easily set system parameters, including temperature, time delays, set backs and patio door delays. Once the parameters are set, users simply press the Clone button for each additional room. Users now only need to enter the parameters once to configure multiple rooms.

Additionally, both systems include a Guest-In-Room™ Detector (GRD) feature, also originated by the company. Housekeepers use a handheld scanner that transmits to the GEM Link system in each room to learn if the room is occupied. This improves the customer experience by eliminating the loud knocking on guests’ doors in the morning as well as the occasional embarrassing walk in. Also, it makes housekeepers more efficient because they can instantly find out if a room is empty simply by pressing a button.

A Long-term Relationship

Lodging Technology has been pleased with the level of support it has received from Digi. “Tech support has been very good,” Fizer concluded. “Digi answered all our questions and was helpful in the initial design. We are very pleased in the way they work with us as well as our manufacturing partners.”



More about XBee ZB ZigBee Modules

The low-power XBee ZB and extended-range XBee-PRO® ZB use the ZigBee PRO Feature Set for advanced mesh networking. By deploying this and any XBee device, OEMs are leveraging the value of the XBee product family and Digi’s unsurpassed Drop-in Networking offering of gateways, adapters and routers. In addition, XBee users can take advantage of platform agility—the ability to rapidly change their XBee solution with minimal development.

Key Features:

- Low-cost, low-power mesh networking
- Self-healing and discovery for network stability
- Interoperability with ZigBee PRO Feature Set devices from other vendors
- Support for larger, more dense mesh networks
- 128-bit AES encryption

For more information on Digi products please visit www.digi.com

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