wi4 Indoor Solutions Enable High-Speed Broadband Access for University Dormitories

Company overview: Liberal Arts University

In the hallowed halls of one of Florida's most prestigious private universities, students pursue academic programs in disciplines ranging from the arts and sciences to business, education and social services. The university remains at the forefront of higher education institutions focused on the enrichment of the learning experience with the application of advanced communication services and tools. Together with their service provider Rapid Systems of Tampa, Florida, the university is once again demonstrating this innovation with Motorola's wi4 Indoor solutions and Broadband Over Powerline (BPL) technology.

The challenge: provide broadband services to students housed in the university's dormitories.

Focused on becoming a preeminent private institution of higher education in the 21st Century, the university made broadband communications a high priority for all students and faculty. As part of the overall broadband strategy, the university needed to provide broadband access to students housed in on-campus resident halls. Traditional wired solutions presented several problems. First, the building's construction was very dense and consisted of concrete walls and ceilings. Secondly, the facility was older and lacked any detailed drawings or documentation. Finally, the building was simply not constructed to support the numerous wiring scenarios of cable, electrical, telephone and broadband. Adding cable or DSL services to each of the student's rooms was cost and time prohibitive and would have required extensive drilling and potential damage to the treasured building.

The solution: a BPL solution that quickly and easily enabled high-speed communications without requiring extensive reconstruction.

With the coming of the new school year rapidly approaching, the university turned to Rapid Systems to design and deploy a broadband network for the two-story dormitory. Using technology by Motorola, Rapid Systems designed and installed the Powerline MU network. Installation was very simple. The university wasn't really a candidate for an internal wireless deployment and needed a plug and play solution. Once the electrician arrived on site, the network was up and running in less than two hours.

The dormitory is connected to the university's network using a high-speed wireless point-to-point connection. From the Ethernet bridge, the signal is passed to a small switch and then to the Powerline MU Gateway. The Gateway converts the broadband signal into the HomePlug® protocol for injection onto the low voltage wires that deliver electricity throughout the dormitory. The signal travels through the circuit breaker panel with the electricity and is distributed to standard electrical outlets in the dorm. Powerline MU modems convert and supply broadband access to students through standard Ethernet connectors. The Gateway, which is in the

CUSTOMER PROFILE

Institution
Liberal Arts University

Service provider
Rapid Systems
Tampa, Florida

Industry
Higher Education

MOTOwi4™ solutions
- wi4 Indoor Solution
- Powerline MU
- BPL technology

Solution features
- High-speed broadband connectivity
- Fast, easy, non-invasive installation
- Myriad of applications including Internet access and VoIP

Benefits
- Competitive differentiator
- Low-cost, secure broadband service

MOTOWI4™

PLUG AND PLAY ACCESS

Powerline MU is a low-cost, scalable, secure system that integrates wireless broadband, radio, Ethernet, networking, HomePlug and modem technologies to deliver high-speed data over existing power lines. It offers true plug-and-play access; no additional software or special drivers are necessary, and in most cases, no changes are required to a user's computer settings.

SERVING HOME NETWORKS TO COLLEGE CAMPUSES

When Dustin Jurman, CEO of Rapid Systems, purchased a new home he needed to get broadband connectivity up and running quickly. Unfortunately, the home did not have CAT 5 wiring that would have facilitated installation. "It was immediately apparent that it was going to be a nightmare to wire the home and would require a considerable amount of time," says Jurman. "Since this was a new home, I didn't want folks going back in through the attic pulling cables and possibly cracking the roof or making unnecessary holes." Instead he used Motorola's Powerline MU system to connect his complete home network of computers, televisions and DVRs as well as an extensive video surveillance system. In less than 30 minutes, the Canopy® subscriber module and Powerline MU Gateway were installed and high-speed broadband connectivity was running throughout the home's electrical system.

"The best part of the Powerline MU product is the reduced time to service. Literally, you can wire a home or building in a matter of hours. Subscriber additions and moves are a snap. You simply grab a modem, authorize it for the system and go!"

— *Dustin Jurman, CEO, Rapid Systems*

electrical room located on the building's first floor, can serve approximately 50 subscribers and delivers an average of 8 to 15 Mbps effective bandwidth.

Installation of the Powerline MU system was easy and straightforward. The installer first wall mounted the Gateway and plugged it into the power outlets created off of the breaker panels. Once in a dormitory room they tested the modem, plugged an IP phone into the modem and then plugged a laptop into the back of the phone. "Everything worked as advertised and everyone was happy."

In today's more safety-conscious education environment, the university wanted to ensure data confidentiality and information security. The Powerline MU system supports 56-bit DES encryption using network encryption keys, modem registration to the network and VLAN tagging to protect data streams among modems.

The benefits: fast and easy deployment, plug and play capability and business differentiator. To recruit and retain top students, universities must compete on a number of different fronts including, of course, academic excellence. Most recently, with the advent of the Internet and the pervasiveness of broadband services, connectivity expectations have also increased for institutions of higher learning. Today's students are demanding nothing less than what they have at home. In many cases, this has become an important differentiator for enticing students to attend a university. Motorola's Powerline MU solution enabled the university to offer broadband services to a student dormitory quickly, easily and cost-effectively and supported the VoIP phones used by the students while preserving the integrity and character of this cherished building.

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