



NETGEAR Router Brings Robots to Life

Conyers, GA – In the next two decades, a significant portion of the Baby Boomer generation will require round-the-clock care. But instead of spending the twilight years of their lives in nursing homes or convalescent hospitals, senior citizens now have an exciting option: they can enlist the aid of personal robots. Thanks to the innovation of Georgia-based GeckoSystems, Inc., the elderly can choose to remain in their homes while receiving attentive, personalized care from family members and loved ones (even if those loved ones live thousands of miles away). And, providing care to each robot is a NETGEAR 802.11b Cable/DSL Wireless Router, ensuring the “brains” of each unit don’t miss a beat.

GeckoSystems President and CEO Martin Spencer founded the company with one goal in mind: quality family care. When his own mother-in-law needed 24/7 supervision, Spencer was moved to create the type of “assistive appliance” that would better ensure her safety and well-being. After eight years of product development, the CareBot™ – GeckoSystems’ new generation of personal robots – is now ready for consumers.

On board each robot is a complex mix of software and hardware systems. Four separate computers are required to power these mobile service robots (MSRs) – one supports a pan-tilt video camera that transmits images back to family members over the Web; a second supports GeckoNav™, the robot’s automatic, self-navigation system; the third oversees GeckoChat™, which enables verbal interaction with the robot; and the fourth, which Spencer calls GeckoMedulla™, supports GeckoNav, GeckoChat, and GeckoTrak™, the company’s suite of artificial intelligence software.

Clearly, maintaining uninterrupted operation of this networked environment is paramount to the operation of the CareBot. That’s why GeckoSystems puts a NETGEAR wireless router in each one.

“We’ve been experimenting with different wireless routers for several years now, and the NETGEAR router is by far the most reliable,” says Spencer. “It’s easy to set up, and it’s much more resilient than any of the other routers we’ve tested. Without the NETGEAR product, our CareBots wouldn’t have nearly the dependable functionality that they do.”

Competitive Routers Not Up to the Task

Before GeckoSystems settled on the NETGEAR Cable/DSL Wireless Router, its engineering team evaluated several comparable products. But none proved up to the task of supporting the sophisticated on-board infrastructure of the CareBot.

Says Spencer, “As wireless technology has gotten better, faster, and cheaper, we’ve checked out every available wireless router on the market. We tested the 3Com product, and still have several gathering dust on our shelves – our engineers won’t even touch them anymore. They got tired of the difficulties they experienced in the configuration process, and the routers just couldn’t maintain a reliable wireless connection.

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 President and CEO
 GeckoSystems, Inc.



CUSTOMER CHALLENGES

- Provide wireless connectivity for on-board robot computer subsystems
- Ensure uninterrupted WiFi performance
- Comply with severe size, weight, and temperature restrictions

SOLUTION

- MR814 54 Mbps Wireless Router with 4-port Switch

RESULTS

- Reliability of router supports home healthcare and security applications
- Efficient operation of router extends battery life
- Four-port architecture drives multiple computer systems and software applications
- Single, multi-position antenna allows easier physical integration

"The Linksys routers were easier to configure, but they also dropped off too often," Spencer continues. "We also found that the Belkin routers were just too 'thin' for our needs; they lacked the power required to drive our systems. It was sort of like having a four-cylinder engine in the car, when we needed a V-6 ... we just couldn't get where we wanted to go with the Belkin routers."

Seamless, Dependable Performance

All four of the computers on board each CareBot now function seamlessly and dependably, connected to the four-port NETGEAR router. The versatility and efficiency of the router greatly decrease the demands on the robots, Spencer says, which can run from ten to twenty-four hours between charges.

"In a battery-powered environment, you're constantly battling heat and weight," he notes. "When you put more systems on board, your power consumption skyrockets and the battery life nosedives. We appreciate the small footprint of the NETGEAR router, and the fact that it's not power-hungry. Plus, it runs efficiently, so it doesn't generate much heat. This has helped us create an MSR that can watch over Grandma from 6 a.m. to 10 p.m., without recharging.

"This kind of system reliability means that family members can see how an older relative is doing at any time of day," Spencer continues. "Also, the CareBot's voice system, GeckoChat, can remind that relative to take needed medications at certain intervals, or perform other tasks necessary to his or her health and well being. With such critical issues at stake, we can't afford to have back-end systems that might fail. That's why we appreciate the robust performance of the NETGEAR wireless router."

Reliability = Security

GeckoSystems also manufactures the SecurityBot™, a mobile security robot that can mingle with high-traffic crowds and patrol, navigate, and broadcast live video surveillance footage. Each six-foot, aluminum-frame SecurityBot can carry 150 pounds of security equipment, including infrared cameras, volatile organic compound (VOC) detectors, and biometric readers. With these leading-edge computer systems on board – connected by a NETGEAR Wireless Router – and regular battery changes, the SecurityBot can provide uninterrupted security that's virtually unmatched by its human counterpart, and even more cost-effective.

"With our SecurityBot, the Wi-Fi system has to be extraordinarily reliable," says Spencer. "Given the country's heightened focus on homeland security, it would be absolutely unacceptable to have a system failure in a SecurityBot that's patrolling an airport baggage claim area, for example. So we're not talking about a need for consumer-grade components in the robot; we need professional, commercial-grade products. The NETGEAR Cable/DSL Wireless Router enables the mobility and reliability demanded by law enforcement and security agencies."

Powering the Digital Home

In Spencer's estimation, personal robots will be the core of tomorrow's "digital home." Owners of the units will be able to use voice commands to have a robot record favorite television programs at a certain time, program the use of certain appliances, and more. And empowering such capabilities will be the solid, efficient performance of a NETGEAR wireless router.

"A personal robot is the best-possible interface for Internet, multimedia, and all of the other systems that keep a house going," Spencer finishes. "You can tell it to Google a restaurant you want to try out, or to do a million other tasks. And in the end, it will all coalesce with the stable, efficient WiFi capabilities provided by a NETGEAR Cable/DSL Wireless Router."

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