



Wireless Broadband Healthcare Solutions

System-Wide High-Speed Connectivity



Wireless Broadband Delivers Cost-Effective High-Speed Bandwidth for Telehealth

Broadband connectivity and communications are revolutionizing the healthcare industry. High-speed networks are helping hospitals, medical centers and health-care systems address and overcome some of their most serious challenges. These include escalating costs, an overflow of patients, shortages of physicians, nurses and other healthcare professionals, troubling increases in medical error, increased records management requirements and many others.

As more and more healthcare providers turn to technology to improve their care and service, one broadband technology is emerging as the most powerful, the most viable and the most cost-efficient solution. Wireless technology.

Wireless Broadband Technology In Healthcare

As the world leader in powerful and innovative wireless broadband solutions, Motorola designs and deploys indoor and outdoor high-speed wireless networks that provide healthcare professionals with solutions that help save lives, including:

- Video teleconferencing enables long-distance collaboration between specialists.
- Systemwide coverage brings instant information access and communications.
- Electronic and remote video monitoring help provide for cost-efficient presence management strategies.
- Mobile communications allow Emergency Medical Technicians (EMTs) to send vital information before a patient arrives at the ER.
- Secure, high-speed data capabilities ensure HIPPA compliance and fast access to patient records.
- Real-time bedside communications help prevent medication and blood transfusion errors.

WIRELESS BROADBAND IN REMOTE/MOBILE TELEHEALTH APPLICATIONS

Wireless broadband provides reliable, secure high-speed connectivity that supports transmission of data-intensive information like CAT scans and MRIs.



Take patient details on the scene



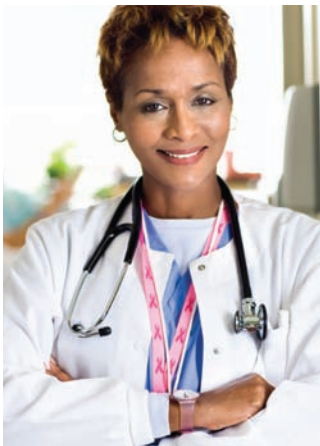
Send data to diagnosis/treatment



Physicians have rapid access to information

High-Speed Voice, Video and Data Communications

Wireless broadband networks bring healthcare environments an unmatched combination of instant high-speed voice, video and data communications plus freedom to communicate to and from anywhere and everywhere. Inside, outside or on the move. With its long-term industry leadership in wireless systems, Motorola provides high-speed connectivity solutions for many of the industry's most important initiatives, such as:



BROADBAND SOLUTIONS FOR RURAL HEALTHCARE

Sparsely populated rural areas around the world are struggling with a lack of sufficient healthcare services, facilities, physicians, nurses and other healthcare professionals. Wireless broadband networks offer rural healthcare providers—even in the most remote locations—the ability to connect in real-time with up-to-date information, patient records, specialists for collaborative medicine, remote monitoring and more. Motorola wireless broadband networks are helping rural healthcare providers improve their quality of patient care, safety and satisfaction... while reducing error and delivering substantial savings.

- **Remote Patient Monitoring.** In many hospitals, electronic and video monitoring help provide for cost-efficient presence management strategies. As populations age and healthcare provider shortages continue, high-speed Motorola wireless networks enable remote monitoring and sensing of a patient's vital signs, helping to reduce the number of scheduled appointments and in-home nurse visits to chronic and post-treatment patients. Significant cost savings are also possible. According to a 2007 *Federal Telemedicine News* report¹, remote monitoring systems at the U.S. Department of Veteran's Affairs have proven to reduce patient care cost by about one-third.
- **Ubiquitous Information Access.** According to a 2008 Report to Congress², thousands of patients die in hospitals every year as a result of medical errors. The report also noted that connecting doctors with networked electronic ordering systems has been shown to reduce the incidence of serious medication errors by 86 percent. Motorola wireless broadband networks are helping to maximize this technology and healthcare partnership. Motorola technology is powering innovative healthcare knowledge sharing ecosystems that empower organizations of all sizes to store, organize and access patient, administrative and operational data throughout the system. And multiple levels of security enable compliance with HIPPA and other industry standards.
- **System-wide Coverage.** Motorola networks deliver indoor, outdoor and mobile coverage within the hospital, across the campus and to other system locations such as acute care facilities, outpatient centers, laboratories, physician's offices and more. Virtual Private Networks (VPNs) can also be established, helping to facilitate doctor/patient e-mail communications and online consultations. Providers can also use their broadband connectivity to help bring high-quality healthcare to rural or other underserved areas.
- **Stronger Safety and Security.** Motorola wireless broadband networks also help increase the personal safety of patients, visitors and care givers in virtually any kind of healthcare environment. Video surveillance solutions deliver real-time images that monitor access to departments like the ICU, nursery and pharmacy, send real-time images of transient traffic at facility entrances and public waiting areas, and remote areas like parking garages around campus.
- **Contingency and Continuity.** Every healthcare institution faces the possibility of disaster, from man-made incidents to natural disasters like hurricanes, tornadoes and earthquakes. It's no wonder many of today's healthcare institutions are re-examining their contingency plans and continuity strategies. In the event of such an occurrence, Motorola's wireless broadband networks can be deployed quickly and cost effectively, providing redundant networks that ensure continuous healthcare services for the community and prevent data interruptions in case of a power failure.

¹ *Federal Telemedicine News*, January 12, 2007 (http://ehealthnews.com/blog/_archives/2007/1/15/2650351.html)

² *Joint Advisory Committee on Communications Capabilities of Emergency Medicine and Public Healthcare Facilities – Report to Congress February, 2008.*

Only Motorola Knows Healthcare Wireless Broadband Solutions Inside and Out

Wireless broadband and the healthcare industry are a perfect match. From matching medications at the bedside to prevent errors, to receiving a patient's vitals from a speeding ambulance, to collaborating with prominent specialists via video conferencing, high-speed wireless networks are helping healthcare providers of all sizes improve care and save lives. Motorola's portfolio of broadband solutions is globally proven to deliver the speed, access, reliability and security that help bring the best possible care to every patient.



MORE MOTOROLA WIRELESS BROADBAND OPTIONS

The Motorola wireless broadband portfolio is one of the most complete and flexible technology systems in the industry. Besides the solutions described in detail, we also offer wi4 WiMAX, a standards-based solution that offers high-speed connectivity in fixed, portable and mobile healthcare environments. In addition, we offer the Expedience® solution, a proven OFDM-based technology platform used in more than 45 countries around the world.



Wi4 Fixed Solutions:

Point-to-Point (PTP). Motorola's wi4 Fixed PTP solutions provide the ideal technology for backhauling data and video files between two locations. Proven to deliver 99.999 percent availability and data rates up to 300 megabytes per second (Mbps), our PTP networks provide carrier-grade reliability for transmitting large volumes of information (such as MRI data or video) in both licensed and unlicensed frequencies. In addition, our PTP Ethernet bridges offer exceptional interference tolerance and can provide coverage across long distances, over water and around obstacles.

Point-to-Multipoint (PMP). Wi4 Fixed PMP networks use unlicensed spectrum to deliver and support high-speed applications and connectivity. Healthcare providers use PMP networks to connect multiple locations—on a medical campus or within a more geographically scattered system—with the main complex. This high-speed connectivity enables collaborative telemedicine and delivers the anytime, anywhere communications crucial to restoring health and saving lives.



Wi4 Indoor Solutions:

Wireless Local Area Network (WLAN). Motorola's Enterprise WLAN solutions provide healthcare organizations with seamless indoor mobility and communications. Wireless broadband communications enable leading-edge applications such as barcode scanning of medications and blood at the bedside, enabling faster and more accurate communications between physicians, nurses and pharmacists and unfettering technology so machines can move more easily to the patient, improving care and increasing efficiency.

Broadband over Powerline (BPL). Our BPL broadband solutions transform a building's existing electrical grid into a high-speed broadband communications network. Healthcare networks are using BPL solutions to provide high-speed telehealth services to multi-unit professional buildings, nursing homes or

assisted living facilities. In addition, BPL is often used in historic buildings where installation of cable or fiber would damage the building's architectural integrity.



Wi4 Mesh Solutions:

MOTOMESH™. Motorola Mesh networks use WiFi and Public Safety purpose-built technology to provide fixed and mobile IP-based communications solutions over a wide area. MOTOMESH networks are ideal for establishing ad hoc networks that give first responders instant access to real-time information and the ability to communicate emergency medical data to a hospital even while treating a patient en route. With a MOTOMESH network, clinics, labs and community-based healthcare locations can create hot zones to transmit medical information exactly when and where it is needed.

With Motorola Wireless Technology, You Can Deploy Your Broadband Network STAT!

The challenges facing the healthcare industry are immediate. And because they need to be addressed sooner rather than later, wireless broadband networks offer even more value over cable, DSL and fiber installations, including:

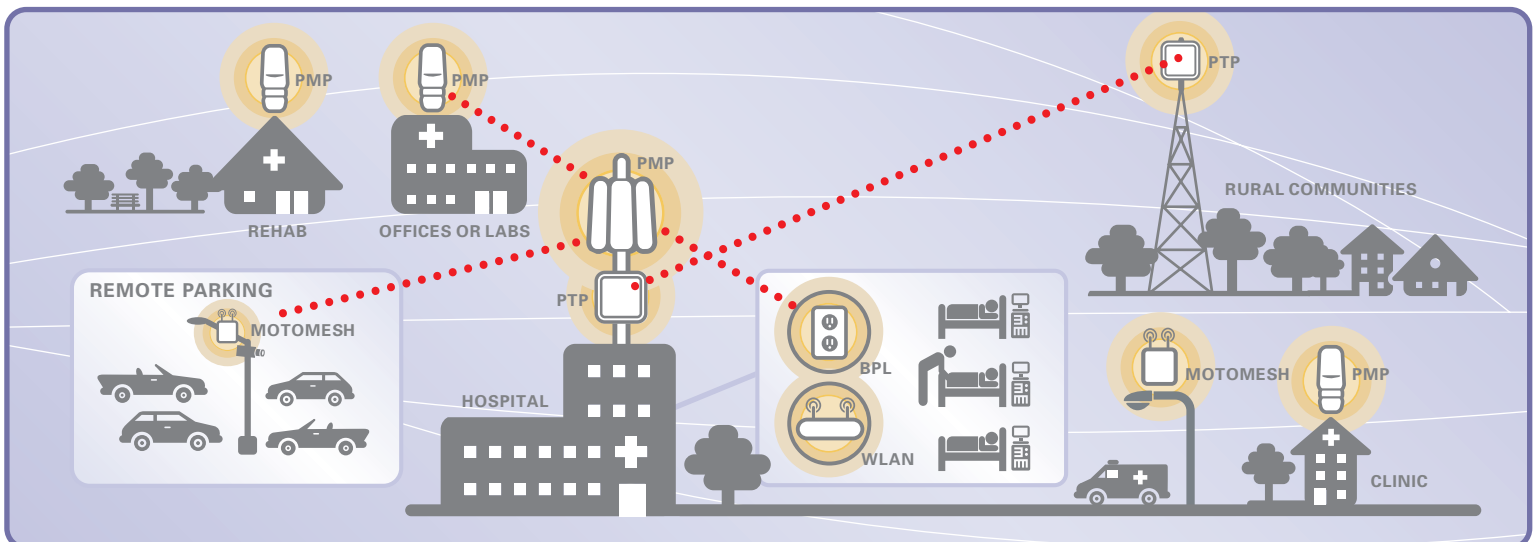


- **Rapid deployment.** Because there's no digging or demolition necessary, Motorola wireless broadband networks can be deployed in days, rather than the weeks, months and even years it can take to install a wired network.
- **Cost efficiency.** Many healthcare organizations use wireless broadband to save dollars by eliminating the recurring costs of expensive T1/E1 leased lines and leased PBX systems. Motorola makes broadband connectivity with multiple indoor and outdoor locations extremely cost-effective. The platforms' exceptionally low acquisition, installation, operation and maintenance costs result in substantially lower cost of ownership.
- **Equal access.** High-speed wireless also allows patients in rural or medically underserved areas where wired service is unavailable to have rapid access to up-to-date healthcare records and high quality care.
- **Reliability.** The unparalleled knowledge gained from Motorola's nearly 80 years of wireless innovation and leadership makes our networks among the most available in the world. Our wireless networks are currently proving their reliability day-in and day-out in more than 3,000 networks in 120 countries worldwide.
- **Security.** Motorola solutions provide multiple layers of robust security across the entire network, helping assure patient privacy and HIPPA compliance. Security tiers include Motorola's own proprietary data scrambling, powerful network intrusion protection and the highest levels of over-the-air encryption with DES and AES.
- **Scalability.** Motorola's wireless broadband solutions allow healthcare organizations to quickly accommodate changing needs, more innovative health and wellness applications, wider geographical areas, larger populations and higher traffic volumes.

World Leadership in Design and Deployment

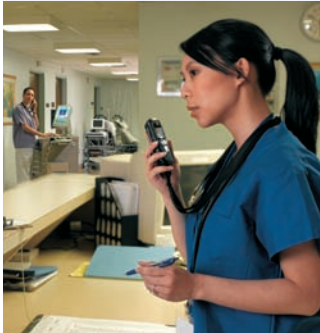
As a leader in wireless and RF technologies, Motorola offers unsurpassed expertise in designing and deploying wireless broadband networks in virtually every type of healthcare or telehealth environment. We offer each of our customers a robust set of management tools and support services that help them meet and master the evolving and formidable challenges of today's and tomorrow's healthcare marketplace.

MOTOROLA INTERIOR AND EXTERIOR WIRELESS BROADBAND FOR HEALTHCARE



Motorola's High-Speed Healthcare Solutions Maximize the Benefits of Telemedicine

From dense urban environments to remote rural locations, Motorola wireless broadband solutions are helping healthcare providers around the world maximize the power and benefits of high-speed telemedicine.



Connecting Remote Clinics in Oklahoma

Oklahoma Cardiovascular Associates is a world-class cardiovascular group based in Oklahoma City, where it operates the 87-bed Oklahoma Heart Hospital. The group also has a series of remote clinics throughout the state. Because imaging is such a crucial part of heart care, the group wanted to be able to review images such as ultrasound, CAT scans and MRIs from anywhere in the system. Finding T1 lines too expensive and too slow to provide such data-intensive images, the group deployed Motorola wi4 Fixed Point-to-Point and Point-to-Multipoint technology at various sites. Physicians are now able to review images and have real-time consultations from any of the connected sites.



Providing Remote Physical Therapy in Mexico

In the remote areas around Puebla, Mexico, there are many patients with physical disabilities. For these patients, it is difficult to travel to the region's Central Hospital to receive correct diagnoses and to participate in regular physical therapy. To help these remote patients, the hospital deployed a Motorola wi4 Fixed Point-to-Multipoint network using remote video cameras and VoIP. Now in 24 locations, the system is helping more disabled people work personally with onsite physical therapists and through real-time, high-speed connectivity, also with doctors who assist in designing and implementing specific, customized therapy regimens.



Supporting a Virtual Private Medical Network in Brazil

Located in the State of Sao Paulo, UNIMED Marilia is part of Brazil's largest private medical assistance network. UNIMED needed to design and deploy a complete wireless infrastructure solution to support the resources of its Virtual Private Network (VPN), plus high-speed Internet service, VoIP, video conferencing and more. Deploying a Motorola wi4 Fixed Point-to-Multipoint wireless network, UNIMED is able to provide reliable, secure broadband connectivity to unite its physicians, service providers, drug stores and hospitals to improve communications, collaboration and quality of care.

Empowering Remote Medical Diagnosis and Care in New Mexico

For many students in Navajo High Schools in New Mexico, it is an approximately three-hour trip to the Navajo Medical Center located in Tuba City. To help improve medical care for these students, the Navajo Tribal Authority deployed a Motorola Point-to-Multipoint wireless broadband network. Now students are able to visit with doctors and therapists regularly, receiving real-time personal care more often and more conveniently.



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